1907.

CITY AND COUNTY OF BRISTOL.

ANNUAL REPORT

OF THE

Medical Officer of Health,

AND OF THE

General Medical Superintendent of the City Hospitals.

SPECIAL REPORT ON "CARRIER" TYPHOID.

Printed by order of the Health Committee.

BRISTOL:
BENNETT BROTHERS, LD., PRINTERS, COUNTERSLIP.
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HEALTH COMMITTEE.

1907–1908.

The Right Honourable The Lord Mayor:

Edward Burnet James, Esq.

Chairman:

Councillor Colston Wintle., M.R.C.S.

Deputy Chairman:

Councillor Frank Moore.

Alderman Terrett.

Councillor Henry Anstey.
(*Chairman of Finance Sub-Committee*).

,, A. Dowling.

,, E. M. Dyer.

,, A. E. Ellery.

,, A. Froud.

Wm. Jennings.

Councillor H. J. Maggs.

,, G. S. Page, L.R.C.P.

,, W. G. Pope.

,, Saml. Shirley.

,, J. S. G. W. Stroud

,, C. J. Thorne.

CITY OF BRISTOL.

HEALTH DEPARTMENT, 1907.

Medical Officer of Health: D. S. Davies, M.D., D.P.H.
Deputy-Medical Officer of Health: J. C. Heaven, L.R.C.P., D.P.H.
Statistical Clerk: W. N. Brown.

Chief Inspector: J. W. Kirley.
Superintendent Inspector: ‡*T. Lowther.
District Inspectors (12):

	District.		District.
H. Calcutt	(Central)	*†F. R. Slade	(St. Paul)
G. E. Bush	(Bedminster)	*†A. E. King	(Knowle)
*H. Hasell	(Horfield)	*†H. C. Leat	(S. Geo. W.)
*J. Wilkinson	(Clifton)	*†T. J. Crofts	(Easton)
*H. J. Kirley	(Cotham)	*F. Kirley	(S. George E.)
*J. T. Lyons	(Stapleton)	*G. Best	(Bedminster)

Inspector of Common Lodging Houses and Bakehouses:
*S. O. Dimond.
Inspector of Dairies, Cowsheds, and Milkshops:
*†E. J. Casely.
Inspectors of Slaughter Houses, Meat, and Fish:
S. Thomas. | *A. Gitsham.
Inspectors of Workshops, &c.:
*†A. W. Griffiths. | *W. J. Wreford.
Chief Clerk: L. W. A. Statton.
Clerks:
C. W. M. Vincent, L. P. Wilson, E. E. Masters, J. G. Watson.

CITY HOSPITALS.

General Medical Superintendent: (Supervisory) D. S. Davies, M.D., D.P.H.
Visiting Medical Officer at Novers Hill Hospital:
G. C. Pauli, M.R.C.S.
Resident Medical Officer at Ham Green Hospital:
J. Fletcher, M.D., D.P.H.

PORT OF BRISTOL.

Port Medical Officer of Health:
D. S. Davies. M.D., D.P.H.
Assistant Port M.O.H.: J. C. Heaven, M.R.C.S., D.P.H.
Chief Inspector: S. O. Dimond.
Port Inspector: A. Dickens.
Assistant Port Inspector and Boatman: J. Rex.
Master of S.S. "Luath": §G. Jackson.

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‡ Surveyor's Certificate, Sanitary Institute.
* Inspector's Certificate, Sanitary Institute.
† Registered Plumber.
§ Certificated Pilot for Bristol Channel.

REPORT.

PART I.

Population and Acreage.

My Lord Mayor and Gentlemen,

As a result of the Bristol Extension Act, 1904, a further addition of 13,000 persons, upon an area of 5,347 acres increased the total population of the City at the end of 1904 to 354,000 persons, living upon an area of 17,000 acres.

The estimated population of the City at the middle of 1907 was 367,979.

Table A.

Showing Population, Acreage, and number of Persons per Acre (Density) in each of the Registration Sub-Districts of Bristol for 1891 compared with the same data for 1907.

Registration Sub-Districts, 1891. (Census Year)	Acreage.	Population middle of 1891.	Density, 1891.	Registration Sub-District, 1907.	† Acreage.	Population middle of 1907.	Density 1907.
S. Mary Redcliff ...	170	9,287	54·6	S. Mary Redcliff (Including Castle Precincts, and part of St. Paul). ‡S. Paul and S. Augustine || Bristol Central.	810	40,011	49·3
Castle Precincts ...	119	5,558	46·7				
S. Paul	148	19,046	128·6				
S. James	68	7,817	114·9				
S. Augustine ...	250	13,788	55·1				
Bedminster ...	992	45,812	46·1	Bedminster, Knowle, etc. ... (Including Somerset added area)	1,924 1,184	85,210	27·4
Clifton	921	29,361	31·8	Clifton	1,504	44,509	29·5
Ashley	434	24,190	55·7	Ashley	1,365	45,909	33·6
Westbury	692	15,540	22·4				
				S. George	1,846	67,533	36·5
S. Philip	744	51,650	69·6	S. Philip	736	48,310	65·6
				Stapleton	2,573	25,547	9·9
				Westbury-on-Trym (Including the whole of Avonmouth, Shirehampton, Westbury-on-Trym, and part of Henbury, added to City from Barton Regis Rural District, 1st October, 1904.)	5,347	10,950	2·0
Bristol City (1891)	4,538*	222,049	48·93	Bristol City (1907)	17,289	367,979	21·28

* Ordnance calculation, including water areas.

† Census, 1901, and including district added on 1st October, 1904.

‡ The Registrar General of Births, Deaths and Marriages, ordered and declared, that on and after 1st April, 1904, S. Augustine Sub-District shall be united with S. Paul Sub-District, and the enlarged Sub-District so formed, shall be called and known as S. Paul and S. Augustine Sub-District.

|| The Registrar General of Births, Deaths and Marriages, ordered and declared, that on and after 1st December, 1905, the S. Mary Redcliff Sub-District shall be united with S. Paul and S. Augustine Sub-District, the enlarged Sub-District to be called and known as Bristol Central Sub-District.

GENERAL AND VITAL STATISTICS.

Population.

	Area in Acres	Population (Estimated)	Rateable Value
City of Bristol, 1897	4,661	232,242	£1,153,311
Additions of 1897	6,756	85,800	£246,815
Additions of 1904	5,347	13,443	£69,560
City of Bristol, 1907	17,004	367,979	£1,732,208

This table shows that the City covers not quite four times the acreage which it covered in 1897, and is more populous by 135,737 persons. The City Medical Officer of Health has inherited the duties and responsibilities of the Medical Officers of Health of this added city; considerable economy has thus been effected in the medical administration, as the salaries of the various medical officers have lapsed.

SUMMARY.

Births, Deaths, Infant Mortality, etc., 1907.

A Year of Records.

The returns show that the recorded **Death Rate** for the year (13·3) compares with a rate 14·7 for the previous year and an average for the 10 years of 16·1.

The **Death Rate** for 1907, is the lowest ever recorded in Bristol. The Death Rate for the 76 great towns of England for 1907 was 15·4.

The **Birth Rate** for 1907 is 24·2, the lowest Birth Rate recorded in this City for 70 years. The Birth Rate for the 76 great towns was 27·0.

The **Infantile Rate** or Deaths of Infants per 1,000 Births for 1907 was 100. This is the lowest Infantile Rate ever recorded in this City. The next lowest rate was 116 in 1903. The Infantile Mortality Rate in the 76 great towns was 127 per 1,000 in 1907.

The **Epidemic Diseases Rate** for the year is 0·8, which is also the lowest rate in our records of 32 years. The Epidemic Rate for the 76 great towns was 1·54.

The most fatal Epidemic Disease was Diarrhœa, which caused 133 deaths. The deaths recorded from this cause last year were 218.

The **Diphtheria** Mortality Rate for the year per 100,000 was 18, a drop from the rate in 1906, which was 22. The Diphtheria Mortality Rate for the 76 great towns was 17. The disease though widely distributed throughout the City was not very fatal.

Scarlet Fever caused only 26 deaths during the year, the lowest number of deaths from this disease for seven years, and corresponding to a rate of 7 per 100,000. The rate for the 76 great towns was 12.

Enteric Fever caused 15 deaths, the lowest number recorded for 32 years, with the exception of 13 in 1905, corresponding to a rate of 4 per 100,000. The rate for the 76 great towns was 7.

Phthisis caused 384 deaths compared with 404 in 1906, while other forms of Tuberculosis accounted for 114 additional deaths, compared with 137 in 1906.

The total deaths from various forms of Tuberculosis thus number 498, compared with 314 from the Chief Epidemic Diseases.

Small-pox.—Six cases of Small-pox were notified during the year, one of which died.

Enteric Fever.—Only 74 Notifications from this disease were received during the year, the lowest number received during any year since notification commenced.

Scarlet Fever.—The Notifications of Scarlet Fever have dropped considerably during the year, 886 were received, the lowest number for seven years.

Measles and Whooping Cough.—The deaths from these diseases during the year number 71 compared with 242 last year. The number of deaths from Whooping Cough, viz., 35, is the lowest number for any year in our records of 32 years.

Births.

The births registered in Bristol in 1907 were 8,915 of which 291 were returned as illegitimate, a percentage of 3·2.

The birth rate for the year was 24·2 a decrease on the rate of last year, which was 25·8 ; the rate has since 1882 shown an almost continuous decrease. (Table B). The rate for the 76 great towns in 1907 is 27·0.

The excess of births over deaths during the year 1907 (*natural increase of population*) is 4,018. The estimated *actual increase* from 1906 to 1907 is 4,756.

Marriages.

3,001 Marriages took place within the borough of Bristol during 1907. The annual marriage rate per 1,000 living is thus 8·1 compared with 7·6, the rate of last year.

Deaths.

4,897 Deaths were registered in the district during the 52 weeks ending the 28th December, 1907, of which 70 or 1·4 per cent. were returned as deaths of illegitimate children. The recorded general death rate for the year, uncorrected for age and sex distribution, is 13·30 per 1,000 living, compared with a rate of 14·58 for the year 1906. The death rate recorded for the 76 great towns in 1907 is 15·4.

Infant Mortality.

Of the 4,897 Deaths, 900 were of infants under one year. The proportion of these deaths to every 1,000 births (infant mortality) was 100·9, compared with a rate of 127·6 for the year 1906, 122·4 for the year 1905, 133·7 for the year 1904, and 116·3 for 1903. The rate recorded in the 76 great towns is 127.

The Infantile Mortality rate varied thus :—

Bristol Central	118·4
Clifton	108·0
St. Philip	104·4
Bedminster	100·6
Stapleton	98·4
St. George	92·8
Knowle	83·9
Ashley	74·8
Westbury-on-Trym ..	73·3

In Table B will be seen the annual infantile mortality rates in Bristol for the past 25 years.

Infant Mortality.

I am entirely in sympathy with any work undertaken for the control of excessive Infant Mortality, and I hope that the appointment of Special Health Visitors will enable me shortly to undertake in Bristol some useful work to this end. But, in estimating the value of work of this kind, we must be careful in our use of statistical methods, lest too much be claimed and disappointment result.

I append a comparative Chart and comparative Reports for Bristol and Huddersfield, from which it is at once evident that the wholesale improvement in the Huddersfield Infant Mortality returns, claimed as due to the special measures taken there, is not proved by the figures adduced to be due either entirely or in any large degree to these measures ; for a practically identical improvement has taken place during the same years in Bristol without special methods to this end having been taken.

An improvement in Huddersfield, probably represented by the slight difference between their figures and those of Bristol, may be due to the special measures adopted there, and it is worth some labour to secure even small results in the matter of Infant Mortality. There is no advantage, however, in deceiving ourselves as to the extent of the improvement to be expected.

HUDDERSFIELD.

INFANT MORTALITY.

RESULT OF YEAR'S WORK.

During 1907, 2.189 Births occurred in the Borough, and 212 infants less than 12 months old died, giving an Infant Mortality figure of 97.

The records of the department extend back for 31 years, and how very successful the work has been will be perceived from a reference to the accompanying diagram, which shows that the present figure is the lowest on record ; for the first time it has fallen below 100. The mean for the 10 preceding years, 1897 to 1906, inclusive, was 135. Thus there has been effected a reduction of 28 per cent. The mean for the three years 1905–6–7 during which the work has been in progress is 117, and for the 10 years preceding this 1895 to 1904, inclusive, was 142.

HUDDERSFIELD INFANT MORTALITY.

	Births Registered.	Deaths under 1 year of age	Infant Mortality Figure.	
1907.	2,189	212	97	Reduction 28 per cent.
Preceding 10 years 1897–1906.	22,991	3,104	135	
The 3 years during which special work against Infant Mortality has been in progress, 1905–6–7.	6,746	792	117	Reduction 18 per cent.
Preceding 10 years—1895–1904.	22,631	3,215	142	

Huddersfield is an industrial centre with not less than 25 per cent. of the female population at child bearing ages working in textile factories. It is therefore the more surprising to find the Infant Mortality figure reduced to a rate comparable to that of the healthiest counties and rural districts.

Estimated Population 1907. 94,814.

BRISTOL.

INFANT MORTALITY.

During 1907, 8915 Births occurred in the Borough, and 900 infants less than 12 months old died, giving an Infant Mortality figure of 100·9.

The records of the department extend back for 31 years, and the accompanying diagram shows that the present figure is the lowest on record ; for the first time it has fallen to 100. The mean for the 10 preceding years, 1897 to 1906, inclusive, was 135. Thus there has occurred a reduction of 26 per cent. The mean for the three years 1905–6–7 is 117, and for the 10 years preceding this, 1895 to 1904, inclusive, was 138·7.

BRISTOL INFANT MORTALITY.

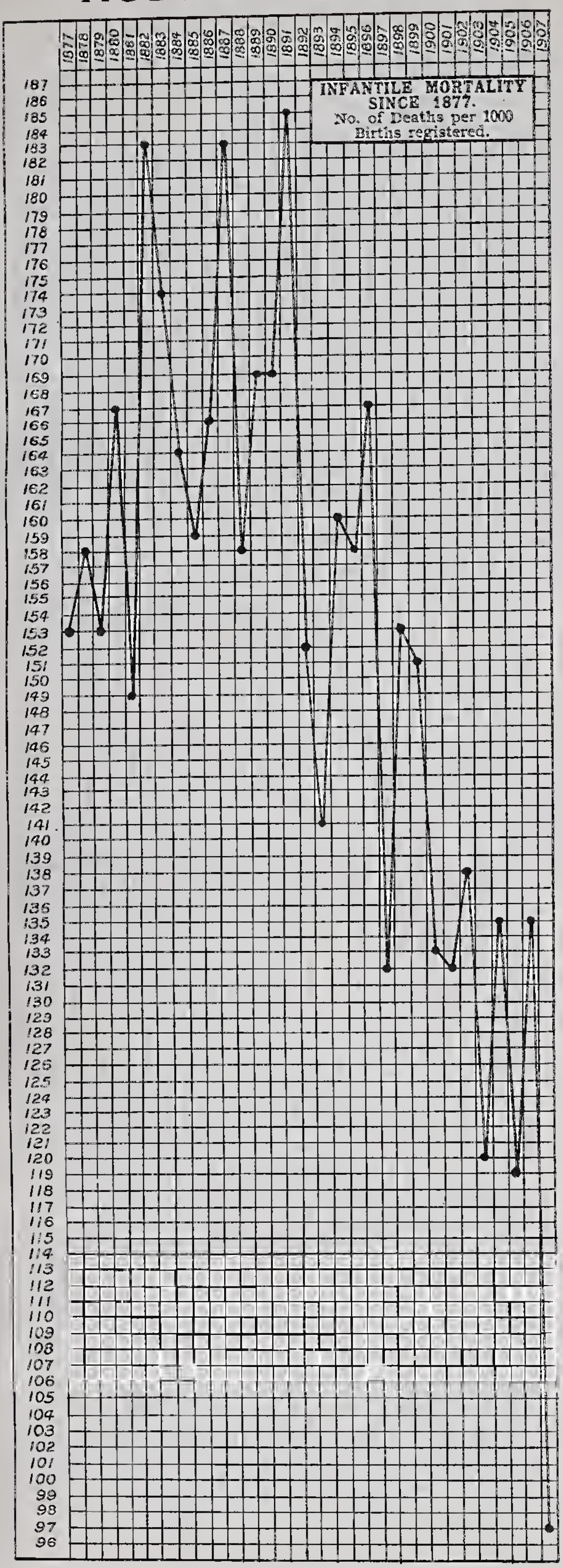
	Births Registered.	Deaths under 1 year of age.	Infant Mortality Figure.	
1907.	8,915	900	100·9	Reduction 26 per cent.
Preceding 10 years—1897–1906.	89,535	12,151	135	
The 3 years, 1905–6–7	27,936	3,278	117·3	Reduction 15 per cent.
Preceding 10 years—1895–1904.	83,673	11,616	138·7	

Bristol is an industrial centre, and the following table shows the proportion of married or widowed females at ages 20 to 45 (child bearing ages) engaged in occupations (Census 1901, Appendix A. Table 31.)

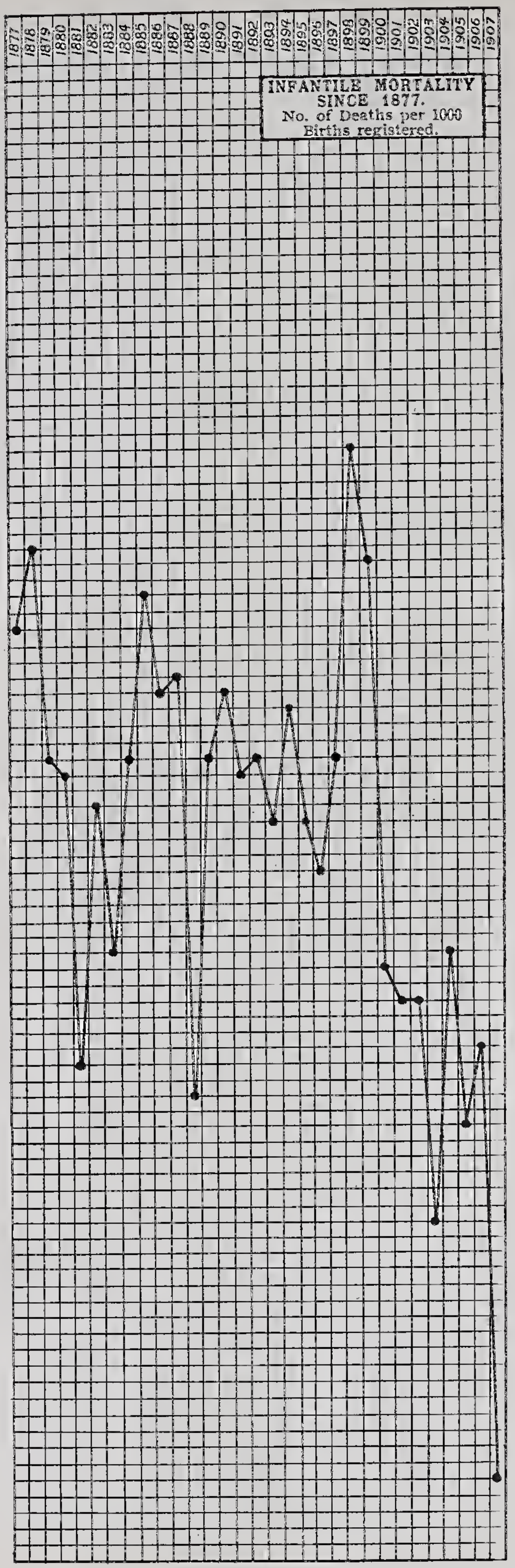
	20—25	25—35	35—45
BRISTOL	14·8	12·3	16·7
HUDDERSFIELD........	20·9	12·4	13·6

Estimated Population 1907 .. .. 376,979.

HUDDERSFIELD.



BRISTOL.



Seven Chief Epidemic Diseases.
(Zymotics).

The rate of Mortality from the Seven Chief Epidemic Diseases, viz. : Small-pox, Measles, Scarlet Fever, Whooping Cough, Diphtheria, Fever (Typhus, Enteric Fever, and Simple continued Fever or Pyrexia) and Diarrhœa was in 1907, 0·8 per 1,000 living, compared with a rate of 1·6 in 1906, 1905 and 1904, and 1·1 in 1903.

The rate recorded for the 76 great towns in 1907 is 1·5.

Annual Rates per 1,000 living. 1907.

	Births	Deaths	Principal Epidemic Diseases. Cols. 4—10.	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhœa	Deaths under one year to 1,000 Births
Cols. ...	1	2	3	4	5	6	7	8	9	10	11
England and Wales	26·3	15·0	1·26	0·00	0·36	0·09	0·16	0·29	0·07	0·29	118
76 Great Towns	27·0	15·4	1·54	0·00	0·43	0·12	0·17	0·35	0·07	0·40	127
142 Smaller Towns	25·7	14·5	1·29	0·00	0·41	0 08	0·15	0·29	0·07	0·29	122
England and Wales less the 218 Towns	25·6	14·7	0·91	0·00	0·25	0·06	0·15	0·21	0·06	0·18	106
Bristol	**24·3**	**13·2**	**0·79**	**0·00**	**0·09**	**0·07**	**0·17**	**0·10**	**0·04**	**0·32**	**100**

Mortality at Ages between 5 and 65.

2,170 Deaths were returned, corresponding to an annual rate of mortality per 1,000 living, between these ages, of 7·0 compared with a rate of 7·1 in 1906, 7·7 in 1905, and 7·9 in 1904. The new tables of the Local Government Board group the ages 1—65, which are no longer comparable with the age grouping 1—60, adopted by the Registrar-General for the large towns.

Mortality amongst Aged People.

1,500 Deaths of Persons aged 65 and upwards were registered, whose ages averaged 75 years and 2 months. The rate of mortality amongst persons living at these ages was in Bristol 87·7, compared with 83·8 in 1906, and 80·2 in 1905.

Prevalence of Sickness in 1907.

Small-pox.

The prevalence and fatality of this disease is here shown for the past 18 years :—

SMALL-POX.

Year.	Cases Notified.	Attacks per 100,000 Living.	Deaths.	Deaths per 100,000 Living.	Case Mortality per cent.
1890	0	–	0	–	—
1891	16	7	1	0·4	6·2
1892	0	–	0	–	—
1893	165	73	20	8	12·1
1894	201	88	16	7	7·9
1895	4	1	0	–	—
1896	42	18	5	2	11·9
1897	10	4	1	0·4	10
1898*	2	0·6	0	–	—
1899	0	—	0	–	—
1900	0	–	0	–	—
1901	1	0·3	0	–	—
1902	4	1	2	0 6	50
1903	46	14	3	0·8	6·5
1904‡	34	9	1	0·2	2·9
1905	13	3	0	–	—
1906	32	8	0	–	—
1907	6§	1 6	1	0·2	16·6

* City Extended. ‡ City again Extended in 1904.
§ Including one Port case.

It is evident from this Table that, since notification began (1889-90), Small-pox has only once (1893-4) assumed epidemic proportions ; in every other year when the disease was brought to the City, the cases have either been confined to those actually introduced, or spread has been successfully limited to the primary offshoots of the introduced case or cases.

Small-pox in 1907.

On 29th January, on receipt of a letter kindly sent by a Bristol Chemist, a man—R.T.S.—aged 63, was visited and found to be suffering from an early vesicular rash of Small-pox. He worked as a labourer in warehousing ship-brought goods, and no clue was found as to the source of infection.

On February 9th, two contacts of this case developed suspicious symptoms and were isolated for 14 days.

On 14th February, a case was notified at another house in the same road—Mrs. E.—36, and died on 18th Febuary, of Hæmorrhagic Small-pox ; no connection could be traced with the initial case.

On 26th February, an assistant at another Chemist's shop, in the same district, was notified as suffering from Small-pox.

On 4th December, a case arrived on a boat from Jamaica, convalescent from modified Small-pox, and was isolated until recovery in the Hospital Ship.

Eight other cases were visited on suspicion, but proved not to be Small-pox.

No further cases occurred in the City after 26th February.

Scarlet Fever or Scarlatina.

During the year 1907, 886 cases of Scarlet fever were notified, and 26 deaths occurred, giving a case mortality of 2·6 per cent.

The prevalence of, and fatality from, this disease for the past eighteen years, that is to say, since Notification commenced, is shown here. Columns 2 and 4 should be used in comparing different years, as they are adjusted for the varying populations.

SCARLET FEVER.

	1	2	3	4	5
Year.	Cases Notified.	Attacks per 100,000 Living.	Deaths.	Deaths per 100,000 Living.	Case Mortality per Cent.
1890	559*2	253	40	18	7·1
1891	888	400	37	17	4·1
1892	1,442	614	47	21	3·2
1893	1,245	553	35	16	2·8
1894	485	214	16	7	3·2
1895	562	252	16	7	2·8
1896	1,352	586	59	24	4·3
1897	511	220	18	7	3·5
1898*	382	120	14	4	3·6
1899	697	217	13	4	1·8
1900	1,971	606	39	12	1·9
1901	2,206	670	36	10	1·6
1902	2,724	793	66	19	2·4
1903	2,168	639	49	14	2·2
1904§	1,258	366	36	10	2·8
1905	1.085	302	39	10	3·5
1906	1,019	289	27	7	2·6
1907	886	240	26	7	2·6

* City Extended. § The City has been further Extended in 1904.

*2 Notification commenced on February 12th, 1890, so that the case mortality for this year is probably overstated.

The disease has been decreasingly prevalent throughout the year, and has again been of mild character.

The distribution of attacks by age is shown below :—

0–1	1–5	5–15	15–25	25 +	Total.
11	256	543	55	21	886

The distribution of the disease in each quarter of the year is shown in the following table for each Registration Sub-district of the City :—

SCARLET FEVER.

REGISTRATION Sub-District.	CASES NOTIFIED.				Year, 1907	Attack Rate per 100,000 Living
	1st Qr.	2nd Qr	3rd Qr	4th Qr		
Ashley	52	38	15	27	132	287
Bedminster	60	24	18	20	122	177
Bristol Central ...	18	54	25	15	112	279
Clifton	47	28	7	15	97	217
Knowle	6	9	7	20	42	253
S. George	44	36	36	59	175	259
S. Philip	21	28	31	19	99	204
Stapleton	12	16	14	19	61	238
Westbury-on-Trym ...	3	4	2	24	33	301
Public Institutions ..	5	3	—	3	11	—
Not belonging to City ...	—	—	—	2	2	—
Total	268	240	155	223	886	240

The attack rate per 100,000 population was lowest in Bedminster, S. Philip, and Clifton, and highest in Westbury-on-Trym, Ashley, and Bristol Central.

Isolation in Scarlet Fever at a public Hospital is not needed for the children of persons in good circumstances, who will indeed do as well or better at home at the expense of some little inconvenience and trouble to the parents. Isolation Hospitals have their use in securing isolation in cases which cannot possibly receive adequate attention at home ; as, for example, amongst the homes of the poorer wage-earners, with large families and few rooms.

The epidemic of Scarlet Fever, which began in 1900, has afforded the first opportunity we have had of observing the habits of this disease in the extended City. The added districts have proved very susceptible of infection, as was anticipated, and the immense increase in population and area has had the marked effect of prolonging the outbreak.

The prevalence of Scarlet Fever bears no relation to the " Sanitary " condition of the district, it is a contact-spread disease, and is largely kept alive by mild cases which may be unrecognised (missed cases—" carriers "). The influence of infected clothing and infected premises in this disease has probably been over-estimated, while the influence of " personal " infection has been much under-estimated. Schools may have considerable influence in the spread of Scarlet Fever.

The difference in the fatality of Scarlet Fever forty years ago and now is quite remarkable. For instance, in 1863 and the following year over 1,100 deaths occurred from this disease. In 1869 and 1870 over 900 deaths occurred, in 1875 and 1876 over 700, and in 1880 and 1881 nearly 400. In 1886 and 1887, 300 deaths occurred. The next epidemic was in 1896, when 59 deaths resulted. In 1900 a larger epidemic caused only 39 deaths, in 1901 a still greater prevalence of the disease resulted in only 36 deaths, while in 1902 the deaths rose to 66. The population in 1907 was 367,979 compared with 158,000 in 1861, If there had been a similar loss in regard to population as there was in the epidemic of 1863, the number of deaths in 1907 would have reached 2,000 instead of being only 26.

The type of disease, judged by the case-mortality, is much milder now than it was 40 years ago, hence it is argued that we may revert to the fatal epidemics which were then experienced. But the favourable alteration in type is probably, in large part, a result, not of general "sanitary" improvement, but of the development of that part of Public Health work which secures removal and care in Hospital for those patients, who, if kept at home amongst large families in small houses, would, by accumulation of infection, lead to septic and fatal forms of the disease. It is in this, I believe, that the value of judicious use of isolation hospitals consists; for in large cities it is not to be expected that hospital isolation can succeed in blotting out a disease which is perennially kept going by personal infection through undiscovered cases. It is noteworthy that the improvement in the fatality returns has been maintained in spite of the unfavourable factor in recent years of increasing school attendance.

Scarlet Fever in 1907.

During the months March to May, 28 cases of Scarlet Fever occurred at the Orphan Homes, Ashley Down, 23 of which were removed for treatment to the City Hospitals.

In November, owing to the prevalence of Scarlet Fever at a school in Easton, a special medical inspection of the scholars was made. The number of children on the School Register was between 1,200 and 1,300.

The Infant Department of this School was chiefly affected, and seven of the nine cases notified began to stay away between 4th and 6th November, pointing to some common source of infection about 30th October, hence an examination of absentees during the month previous to visit (19th November) was instituted, in the hope of finding undetected peeling cases.

69 children who had been absent during the previous month were examined, and one child was excluded, as there was faint "peeling" on the chest, and the child had been absent with sore throat and vomiting. This child was afterwards notified by a Medical Attendant as suffering from Scarlet Fever, and was probably the cause of the outbreak, as it had been going about in an infectious state for three weeks.

Enteric Fever (Typhoid Fever).

During the year 1907, 74 cases of Enteric Fever were notified, and 15 deaths occurred, giving a case mortality of 20 per cent.

The prevalence and fatality from this disease for eighteen years past is here shown :—

ENTERIC FEVER.

Years.	1 Cases Notified.	2 Attacks per 100,000 Living.	3 Deaths.	4 Deaths per 100,000. Living	5 Case Mortality per Cent.
1890*[2]	122	55	33	14	27·0
1891	116	52	23	10	19·6
1892	135	60	18	8	13·3
1893	122	54	26	11	21·3
1894	90	39	21	10	23·3
1895	89	39	22	9	24·7
1896	110	47	20	8	18·1
1897	343	147†	47	20	17·4
1898*	113	35	26	8	23
1899	219	68	35	10	16
1900	293	90	44	13	15
1901	281	85	40	12	14
1902	319	93	58	17	18
1903	134	39	21	6	15
1904‡	172	50	26	7	15
1905	76	21	13	3	17
1906	120	33	21	5	17
1907	74	20	15	4	20

* Extended City † Milk Outbreak introduced from the County.

* Notification commenced February 12th, 1890, so that the case mortality for this year is probably overstated. ‡ City again extended in 1904.

No estimate can be made as to the number of cases occurring before 1890, when Notification commenced; the high figures of 1897 are due to the introduced milk outbreak of that year. In 1897, the City, containing 232,242 people, was extended, and in 1904 contained 343,204 persons, an increase of 110,962 persons. In 1904, a further extension was made. Allowance in columns 2 and 4 is made for the increase of population year by year, and the figures in these columns should be used for comparison. The attack rate fell very considerably in 1903 and 1904 from the high rate of 1902, and the death-rates (Col. 4) for the years 1903 and 1904 were the lowest recorded up to then. The phenomenally low rate of 1905 is half the lowest rate previously recorded.

The figures for 1907 are the lowest recorded with the exception of 1905.

The distribution of the disease in each quarter of the year is shown in the following table, for each Registration Sub-district of the City. The Sub-districts most affected are seen to be Bristol Central, and Westbury-on-Trym.

REGISTRATION. Sub-District.	CASES NOTIFIED.				Year 1907.	Attack Rate per 100,000 living.
	1st Qr.	2nd Qr	3rd Qr.	4th Qr.		
Ashley	2	1	1	2	6	13
Bedminster	4	—	2	5	11	16
Bristol Central	6	—	4	4	14	34
Clifton	—	—	1	2	3	6
Knowle	—	—	—	1	1	6
S. George	4	1	3	5	13	19
S. Philip	3	3	—	—	6	12
Stapleton	—	1	1	—	2	7
Westbury-on-Trym ..	—	—	1	2	3	27
Municipal Institutions ..	2	—	—	1	3	—
Not belonging to City ..	5	1	4	2	12	—
Total ...	26	7	17	24	74	20

Enteric Fever is admitted for treatment into the Public Institutions, and 55 cases (11 from outside the City) were nursed in the Royal Infirmary, and General Hospital through the year; 1 case (from outside the City) was treated by the Guardians. With the exception of 12 cases nursed at Clift House in 1897, no provision had been made for this disease in the City Hospitals before July, 1899, and cases, if not admitted to the general Hospitals, had to remain at home. There is still insufficient general isolation accommodation to meet any emergency, and this insufficiency has been considerably accentuated by the extension of the City and the consequent great increase in population, as well as by the undertaking to provide for the Guardian's cases, and by the recent closing (July, 1906) of Clift House Hospital, for Diphtheria.

TYPHOID FEVER & CHRONIC TYPHOID CARRIERS.

Typhoid Fever has shown in England and Wales during the three and a half decades that have elapsed since it was distinguished in the Registrar General's returns from Typhus Fever, a continuously decreasing *mortality*:—

Periods.	Death rate per million living.
1871—1880	322
1881—1890	198
1891—1900	174
1901—1905	110

While the *mortality* has decreased, however, the *fatality* (or case-mortality) has remained practically stationary. Thus, in the London Fever Hospital in 1848—1857 the fatality rate was 17·3 per cent.; in the Metropolitan Asylums Board Hospitals in 1871—97 the rate was again 17·3 per cent., and in the single year 1897 it was 18·7 per cent.

Upon the discovery of the bacillus of Typhoid Fever in the Eighties, it was anticipated that control of the disease would become simple, the causal bacilli were supposed to enter, occupy and leave the body as an orderly army, leaving no stragglers, and recovery of the patient was held invariably to connote the death and disappearance of the bacilli.

If this were always so, the control of such a disease would be comparatively simple, and the knowledge that the typhoid organism is a flagellate water-living parasite, leaving the body by way of the solid or liquid excretions during the clinical continuance of the disease, and completing its life history by a more or less prolonged saprophytic existence in organically polluted soil or in water, pending its introduction into the intestinal tract of its next host, would sufficiently explain the etiology of the disease in its well known phases as water-borne, milk-borne, oyster-carried, and so on.

But allowing for the fulfilment of these conditions in the majority of instances, there still occurred a residuum of cases which did not fall into line with these routine conditions, and fuller knowledge of the life history of the causal parasite has become necessary in order to account for these aberrant outbreaks.

The easy habit has unfortunately arisen of referring obscure sporadic outbreaks to general insanitary conditions and the smoke-test has no doubt led to the re-construction of much innocent drainage, the cost of which might have been better expended.

That the major portion of the decline in the prevalence of Typhoid Fever has been due to general improvement in drainage and water supply is probably, in view of the nature of the disease, incontrovertible, and this obvious relationship has tended to obscure the validity of personal transference, mediate or immediate, of infection.

Two things became, however, in the course of time apparent, one, that owing to enhanced resistance to infection in certain individuals, attacks in such nearly immune persons might be represented by very slight or negligible symptoms, so that neither the patient nor his friends, nor even his medical attendant would have reason to suspect the real nature of his illness. Hence arise "ambulant" cases, and "missed" cases, affording far greater opportunities for the distribution of infection owing to the ignorance of any need for, and consequent lack of, precautions; the other, that after apparent recovery, some of the bacterial diseases may persist in the patient, who, himself immune, may become a "carrier" of the disease, and be potentially infective towards others.

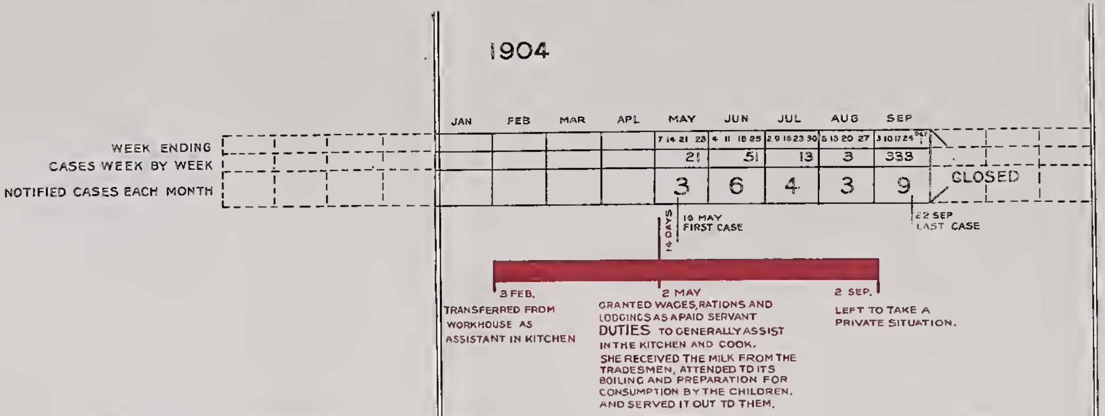
TYPHOID FEVER

OUTBREAKS ASSOCIATED WITH THE SAME CARRIER.

MRS H - - - SUFFERED IN 1901 FROM A SEVERE ATTACK OF TYPHOID FEVER (CASE 147) ONSET JAN 7 1901
ADMITTED TO BRISTOL ROYAL INFIRMARY.
DISCHARGED MAR 16 1901.

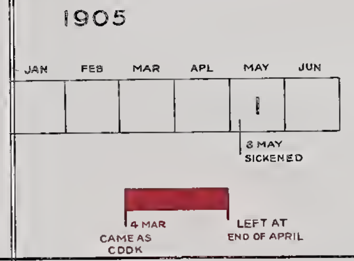
1904 GROVE HOUSE, BRISLINGTON.

		INMATES		
		ATTACKED	DIED	SUSPICIOUS
GIRLS	36	25	2	8
ATTENDANTS	4	0	0	0



1905 RICHMOND TERRACE GIRLS' HOME.

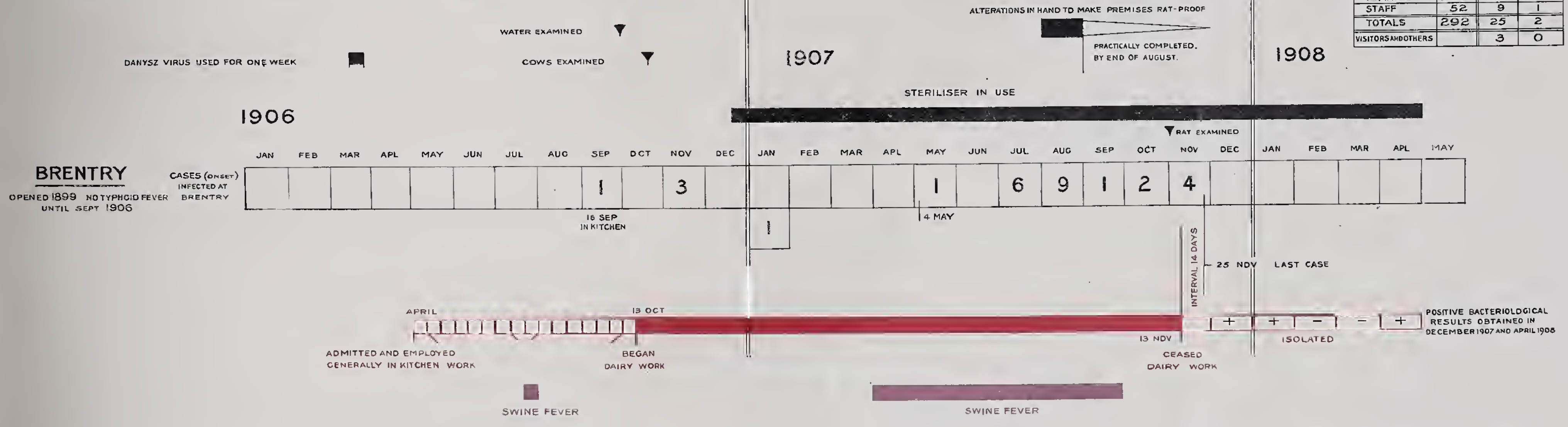
		INMATES
		ATTACKED
GIRLS	30	1



1906 1907 BRENTRY

OPENED 1899 NO TYPHOID FEVER UNTIL SEPT 1906

		CASES	DEATHS
INMATES	240	16	1
STAFF	52	9	1
TOTALS	292	25	2
VISITORS AND OTHERS		3	0



INTERCURRENT EVENTS.

AS DANYSZ VIRUS HAD BEEN USED IN MARCH, 1906 FOR ONE WEEK, AND IT WAS SUGGESTED THAT THIS MIGHT HAVE SOME CONNECTION WITH THE OUTBREAK, A RAT WAS EXAMINED, WITH NEGATIVE RESULTS IN OCTOBER 1907.
SWINE FEVER OCCURRED AMONGST THE PIGS AT THE INSTITUTION IN JULY 1906, AND AGAIN FROM MARCH TO SEPTEMBER 1907. THIS WAS DEALT WITH UNDER VETERINARY ADVICE.

An Account of Two Institution Outbreaks traced to the same "Carrier."

The occasional persistence of the *Bacillus typhosus* in the human body over long periods has been recognised for some years, and the possibility that this condition might afford the explanation of obscure outbreaks was suggested by Horton Smith in his Goulstonian Lectures in 1900 [16]. At that time it was generally accepted that the *Bacillus typhosus* could be demonstrated in the stools, if care was taken, during the first and second and early part of the third week of the disease, and possibly during the early part of the relapse. Later than this it could not be demonstrated by the laboratory methods then available. It was known, however, from the experiments of Chiari [4], that the bile in the gall-bladder contains the *Bacillus typhosus* in the majority of typhoid cases, and often in pure culture.

It was naturally supposed at first, that, as the fever passed away and as health returned, the bacillus, the cause of the disease, would disappear from the tissues also, and this was demonstrated to be the case in some of the earliest observations. But the experiments of Blackstein and Welch [1] showed that sometimes at least the typhoid bacillus might remain for much longer periods; experimentally, in rabbits, it was found in the bile 128 days after the date of inoculation, and this suggested that the same thing might occur in man. Between 1894 and 1896, Buschke [3], Sultan [18] and Bruni [2] quoted cases in which the bacilli were found in the pus from bone abscesses, in two instances six years after the primary fever, and in one case seven years after. Hunner [7] quotes cases in which cholecystitis was shown to be accompanied by the presence of the *Bacillus typhosus* in pure culture, in one case three months after the fever, in another eight months, and in a third after an interval of seven years. Von Dungern [6] records a case in which, fourteen and a half years after the attack of typhoid fever, the bacilli were still present in pure culture in the cystic contents [5].

These facts have hitherto remained largely ignored in their epidemiological relationship, partly because the assumed rarity of their occurrence suggested that they were merely bacteriological curiosities, and partly because the isolation of the *Bacillus typhosus* from the fæces was at that time not only difficult but very uncertain. In 1906, however, owing to the continued prevalence of sporadic typhoid in South Germany, the subject was taken up with the advantage of modern and more certain laboratory methods, and Klinger [10] found that persons in apparent health can harbour typhoid bacilli and excrete them. The German observers divide "carriers" into two classes :—

(1) "Acute carriers," who have shown no symptoms, but, after being in direct contact with patients, may carry and excrete bacilli for a short time and in small numbers.

(2) "Chronic carriers," who have a short or a long time before gone through a regular attack of typhoid and may excrete for months or years more or less pure cultures of typhoid bacilli.

The "chronic carriers" are obviously the most dangerous class ; about four per cent. of typhoid patients appear to become carriers ; the condition is most common in women, and the bacilli apparently are harboured in the bile in the gall-bladder or in the intra-hepatic bile passages, whence intermittently they are discharged and excreted with the fæces. This condition may persist for as long as twenty-nine years [5]. When these chronic carriers are engaged in the preparation of food, or in dairy work, they are apt to give rise to intermittent local outbreaks of typhoid fever, probably by contamination of the food with the hand after defæcation or micturition. Kayser

[8] quotes the case of a proprietress of a bakehouse at Strasburg, who prepared the meals for the employés, where each journeyman developed typhoid soon after arrival; her stools were full of bacilli and she gave a distinct Widal reaction (1—100). Soper [17], of New York, records the case of a cook, who, in five years, lived in four families and gave rise to 28 cases; the bowel discharges furnished practically pure cultures of the typhoid bacillus, and the extrusion of bacilli in her case was shown to be intermittent. A. and J.C.G. Ledingham [11] record 31 cases in fourteen years at an institution in Scotland, finally traced to carrier cases.

I believe it will be found that the two instances I am about to narrate are the first recorded outbreaks in England traced to the influence of a typhoid "carrier."

I.—OUTBREAK OF TYPHOID FEVER AT THE BRENTRY CERTIFIED INEBRIATE REFORMATORY, BRISTOL.

In November, 1906, my attention was first called to an outbreak of typhoid fever at this institution. The general circumstances of the outbreak have been so fully detailed in a Parliamentary paper [14] that the case will now be presented as briefly as possible.

The essential facts are these. The Home contains 240 inmates and 24 resident officers; it has been opened since 1899, and typhoid fever first appeared in 1906. The water supply is good and the drainage presented no defects able to account for the occurrence or distribution of the disease. No cases of typhoid fever existed in the neighbourhood. In September, 1906, a kitchen helper developed typhoid, and in November three more cases occurred (Chart I.). These cases already suggested carriage by milk, for one was a female inmate who received an extra allowance of one pint of milk daily as she was nursing; another was the gardener's wife, who lived in a detached cottage on the premises and received only milk from the institution; the third was an outdoor policeman, who received an allowance of milk for his tea; but no explanation of the origin of the initial case was forthcoming. In January, 1907, the policeman's wife sickened, probably from nursing him; they lived in a cottage off the estate.

Then there was a lull until May, 1907, when fresh cases occurred, continuing through July, August, September, October and November, in small groups and at varying intervals. Already in November, 1906, the Home Office medical inspector had installed a milk steriliser, and all milk was sterilised before use and then stored in the dairy until wanted. The evidence in the 1907 cases was still stronger against the milk, which evidently had opportunity of contamination *after* sterilisation.

On the reappearance of the disease in May, 1907, the Home Office medical inspector and the medical officer of health for South Gloucestershire (Dr. Bond) made a careful examination of the premises and discovered that rats had free communication with the dairy and food stores, and it was supposed that they carried infection in from the sewers. Accordingly the food stores and dairy were made rat-proof. This was practically completed by the end of August, but still the cases dropped in steadily month by month.

The problem was at this point when I was invited by the Brentry Committee, in the autumn of 1907, to inquire into the renewal of the Brentry outbreak. I commenced this inquiry in November, 1907. Dr. Branthwaite and Dr. Bond made me fully acquainted with the results of their careful and detailed inquiries and left me a free hand. As a matter of fact, they had narrowed the issue down so closely, and had excluded so many possible sources of infection, that my task was comparatively easy.

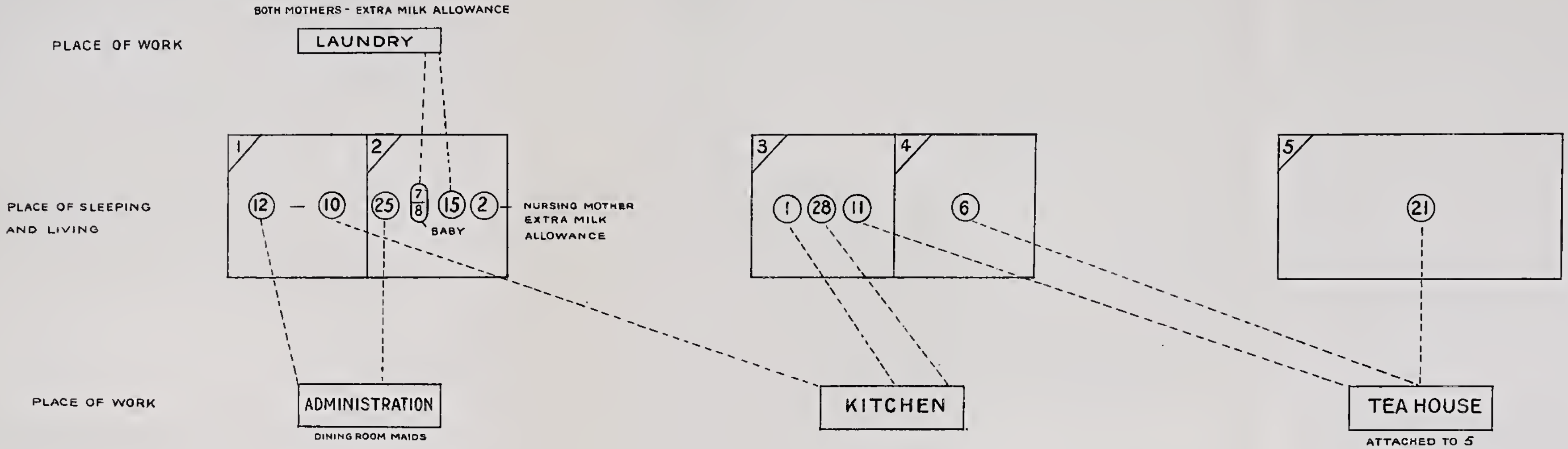
I was at once struck by two facts. First, the obvious carriage of infection by milk; secondly, the certainty

BRENTRY

CHART II.

DIAGRAM SHOWING PLACE-DISTRIBUTION OF ATTACKS ON FEMALE INMATES

FEMALE INMATES - ATTACKS.



This Diagram shows the grouping of the attacks of the 11 female inmates according to their place of abode and according to their work. The grouping apparently suggests nothing as to place-infection, but it is noticeable that every female inmate attacked either had an extra allowance of milk, or had special access to food (including milk) in the administration (as dining room maids), in the kitchen, or in the tea house The only persons living and sleeping in 4 & 5 who were attacked were (6) & (21) both working in the tea house.

Nos 2, 7 and 15 are the only female inmates receiving extra milk allowance and all three were attacked

The three Female Officers attacked were the Matron (No. 19) whose attack dated from the Tea Party on 3 July on which date a Visitor who stayed to tea also contracted Typhoid.

Miss H. (No. 13) who slept in No. 5 and was Kitchen Officer, and Miss P. (No. 27) who slept in No 3 and worked generally in Female Village serving meals, etc.

that this must become infected after sterilisation; whence followed the inference that, as rats and other possibilities had been excluded, the agent distributing infection might be a "carrier" case dealing with the milk.[1] I then learned, with the aid of the chairman of the Brentry House Committee, that an inmate employed as cook and dairymaid, Mrs. H., had suffered, in January, 1901, from a severe attack of typhoid, from which she had apparently recovered. She is a woman aged 50, to all appearance in perfect health. She was admitted to Brentry in April, 1906, and was employed in kitchen work up to October 13, 1906, when she was entrusted also with the dairy work, which she continued up to November, 1907.

The milk, after sterilisation, is stored in the dairy, whence it is measured out for the various "villages" by means of a hand-dipper. All the milk passed through her hands. In the passage leading from kitchen to dairy is a w.c., accessible to the kitchen workers, containing a lavatory basin which was not in use. On November 13, I requested that Mrs. H. should be absolutely excluded from all kitchen and dairy work, and isolated as "suspect" until I could arrange for a pathological examination of her blood, urine and stools. This was done. At the same time I ventured the opinion that, allowing for the incubation period of typhoid fever, no further case should occur. The last case occurred on November 25th, twelve days after her isolation commenced; and the institution has remained free up to the present time (May, 1908).

Evidence of Milk Conveyance.—I have summarised the evidence implicating milk on Charts 2 and 3. Chart 2 shows that of the eleven female inmates attacked, three were employed in the kitchen, two as dining-room maids, and three in the tea-house, all thus having access to milk. The three other female inmates attacked were

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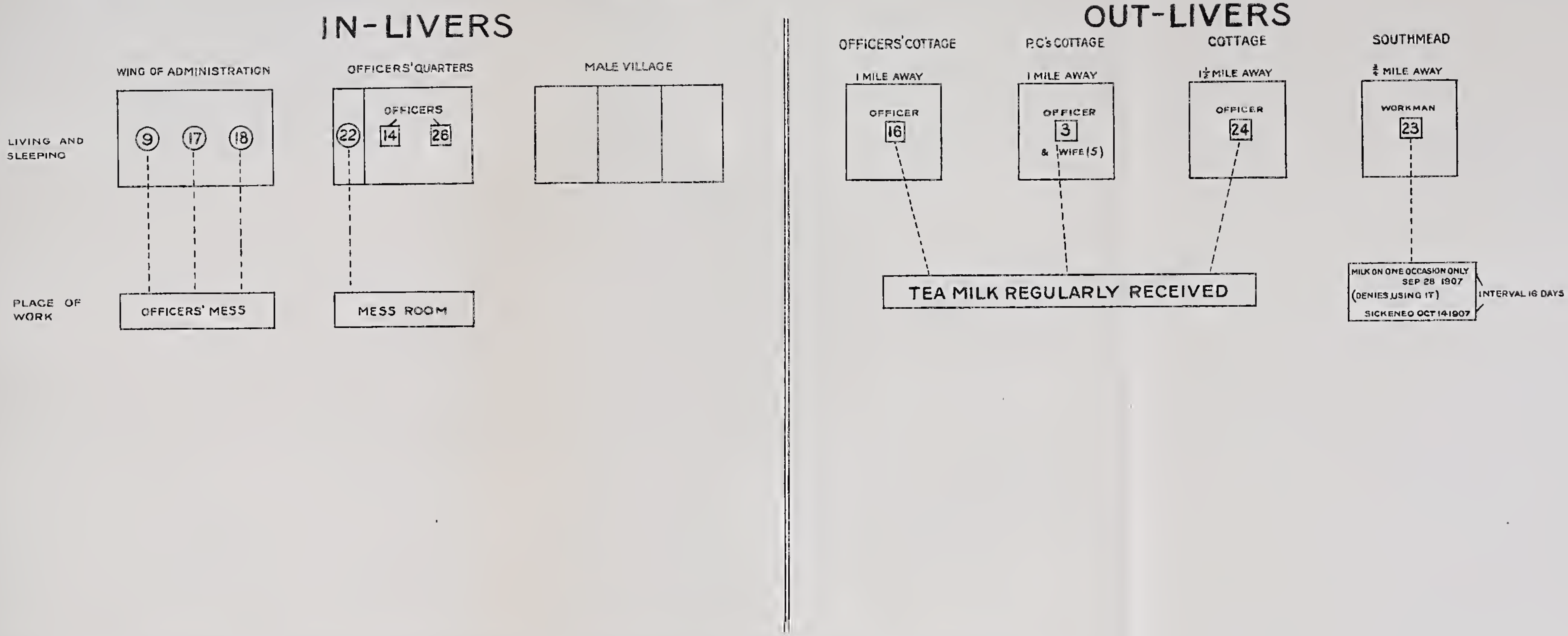
(1) My attention had been especially redirected to this possibility by Savage, "Recent work upon the Bacteriology of Typhoid Fever in its relationship to Preventive Medicine." *Public Health*, October, 1907.

BRENTRY

CHART III.

DIAGRAM SHOWING PLACE-DISTRIBUTION OF ATTACKS ON MALE INMATES AND OFFICERS.

MALES – ATTACKS



THE INMATES 9. 17. 18 AND 22. WERE THE ONLY ONES ENGAGED IN TEA-MAKING OR IN ATTENDANCE UPON OFFICERS' MESS AT THE TIME OF THEIR ATTACK.

THE OFFICERS LIVING-OUT WHO WERE ATTACKED, ALL HAD TEA-MILK REGULARLY SUPPLIED.

NONE OF THE NINE OFFICERS LIVING-OUT WHO HAD NO TEA-MILK SUPPLIED WERE ATTACKED.

the only three who, as they were nursing, received an extra supply of one pint of milk. The baby (hand-fed) of one of these was also attacked. Three female officers were attacked, including the matron, whose illness dated from a tea party on July 31, 1907. On this occasion a visitor from a Bristol institution, where there was no typhoid, called and shared with the matron, a female officer, and the doctor's little boy, a meal of which clotted cream, skimmed off the sterilised cooled milk by Mrs. H., formed part. The officer refused this, the matron and visitor, who ate some, sickened simultaneously on August 20. The little boy ate heartily but remained well. Previously to this, however, on June 20, 1907, he had developed a high temperature, which continued until June 27, and was followed by considerable depression and slow recovery; his general appearance during this attack was consistent with a masked attack of typhoid fever, although he gave a negative Widal on July 21 and on December 10.[2] If this was really a minimal attack of typhoid, it may account for his immunity. Chart 3 shows that all the four male inmates attacked were directly employed in the officers' mess-room, where they had access to milk. Cases 17 and 18 took on Case 9's duty and sickened in turn. The three officers who lived out and were attacked all had tea-milk regularly supplied; one workman who had milk served out to him once on September 28, 1907, but denies drinking it, sickened on October 14, *Of the nine officers who lived out, but received no milk, not one sickened.*

***Pathological Investigation.**—The laboratory results obtained in the case of Mrs. H. are here summarised: (A)

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(2) See *Public Health*, July, 1907, p. 607: "Some difficulties in preventing Personal Infection in Enteric Fever," for interesting points relating to mild attacks of typhoid fever in children.

*Prof. Walker Hall, Prof. of Pathology, Bristol University College Medical School, and Pathologist to the Bristol Royal Infirmary, is responsible for the laboratory results.

On November 18, 1907, two samples of her blood both gave the following reactions (Widal) :—

Dilution	Time	Reaction
1 in 10 ..	60 min. ..	Loss of motility ; agglutination complete.
1 ,, 25 ..	,, ..	Loss of motility ; agglutination present but incomplete.
1 ,, 50 ..	— ..	No change.

The urine yielded neither *Bacillus typhosus* nor *Bacillus coli.* The fæces yielded no organisms resembling *Bacillus typhosus*, but chiefly *Bacillus coli.* Generally the excreta appeared to be normal. (B) On November 29, 1907, the fæces similarly yielded no organisms resembling the *Bacillus typhosus*, and were apparently normal. (C) On December 20, as Mrs. H., after slight abdominal pain, had passed a light brown to yellow brown loose stool of uniform soft consistence, not unlike an early typhoid stool, containing no excess of mucus, blood or fat, opportunity was taken to make a third examination. Typhoid bacilli, giving all the typical reactions, were upon this occasion isolated from the fæces. The bacilli were freely motile and reacted to immune serum thus :—

Dilution	Time	Reaction
1 in 25 ..	30 min. ..	Loss of motility ; complete agglutination
1 ,, 200 ..	,, ..	,, ,, ,,

The intermittence during November is noteworthy. Upon the failure to recover the *Bacillus typhosus* in November it was decided to make additional examinations of certain inmates who had more or less to do with food preparation or dairy work. Sixteen blood examinations and twelve examinations of fæces were carried out, but failed to demonstrate another "carrier." In the fæces of the typhoid convalescents examined, the *Bacilli coli communes* exhibited many alterations from their usual reactions. They rarely were quite typical. One or more of the biological tests were always less pronounced than usual.

Methods.—The fæces were collected free from urine and placed in vegetable parchment paper and then in stoneware jars. They were conveyed to the laboratory as rapidly as possible. On arrival, ten platinum loopfuls, taken from different parts of the material, were transferred to a tube of sterile normal saline solution. After shaking, a loopful of this mixture was placed in a broth tube. From this latter tube a loopful was taken and put into a tube containing the following medium: ordinary beef broth with 0·1 per cent. sodium taurocholate and 1 in 1,500 malachite green (Grübler). In isolating the *Bacillus typhosus* from material other than fæces, the Löffler malachite green gelatine medium has been used with successful results. With the fæces, however, the green colour soon fades, organisms other than the *Bacillus coli communis* grow well, and the plating is slow and less satisfactory. Hence the use of the present medium. Klein [9] has suggested this manner of culture for the isolation of organisms from shellfish. McWeeney (1908 meeting of the Pathological Society of Great Britain and Ireland) showed cultures obtained in a similar way, but without the addition of the bile-salt. After twenty-four hours growth in the malachite green broth, a loopful of the culture was transferred to a second broth tube, and a series of six plates were inoculated by spreading a loopful of this culture over the surface or allowing a few drops to run over the surface. The plates were then left partially uncovered in the 37° C. incubator for half an hour, and then fully covered and inverted. As a rule five McConkey bile-agar plates and one Conradi-Drigalski plate were used for each sample. Twenty-four hours later the colourless, non-lactose colonies were examined for motility in a hanging drop preparation and after further plating were transferred to tubes containing the following media: glucose broth, mannite broth and lactose broth. When colonies were obtained which formed acid, but did not produce gas in these media, they were further cultivated in dulcite, saccharose and sorbite broths; and in litmus milk, neutral red agar, glucose-agar, Barsiekow's medium with glucose, and with lactose; and in peptone water for the indol reaction. The organism which gave the distinct typhoid reactions was then treated with serum from cases attacked in the present epidemic and with immune horse serum.

Danysz Virus.—As this had been used in an attempt to kill off the rats infesting the premises, and it had been suggested that this might have some causal relationship to the outbreak, a rat was forwarded in November, 1907, to Professor Hewlett, with negative results. Bainbridge has recently stated that Danysz's bacillus and the bacillus of mouse typhoid are practically identical. These organisms have been considered non-pathogenic for man, but an outbreak of fatal enteritis has followed the consumption of food contaminated by similar virus. Although the substance is sold publicly as harmless, it is evident that careful handling is necessary.

Swine fever broke out on two occasions, viz., in July, 1906, and from March to September, 1907. This was dealt with under veterinary advice. There is generally supposed to be no connection between human and pig typhoid, but we should have liked to make some enquiries as to the possibility of infection from " carrier " to pig, and generally into the relationship between human and pig typhoid. However, as the pigs had been destroyed before the investigation was taken up, no opportunity offered itself.

Confirmation of causal influence of Carrier by evidence from a previous outbreak.—The belief that Mrs. H. was the actual cause of the Brentry outbreak, if not proved by the foregoing sequence of events, at least provided a working hypothesis which stood the test of experiment. The necessary control experiment was found by tracing back her history to a period (1904) when she was in service at another institution, where a similar outbreak occurred

II.—THE OUTBREAK OF TYPHOID FEVER AT GROVE HOUSE HOME FOR GIRLS, BRISLINGTON, NEAR BRISTOL.

In 1904 this Home was occupied by thirty-six girls (aged from 5 to 15) boarded out by the Bristol Guardians and supervised by four officers. Typhoid fever first appeared in the third week of May, and from that time until the end of September, when the Home was closed, cases continued to occur in crops at intervals of a week or more (Chart 1). Twenty-five cases developed typhoid fever, eight other suspicious cases occurred, and two deaths resulted. Thus nearly all the girl inmates were attacked. How the first case arose it was found impossible at the time to ascertain; there had been no typhoid in the district for months.[1] The cases occurred in groups at intervals, many cases were very mild, the water supply from the Bristol Waterworks Company was above suspicion, there were no other cases among the dairyman's other customers, nor was the manner of the outbreak suggestive of contamination of water or milk supplies; no defects in the drains were discoverable likely to have any influence in causation. No cases occurred during 1904 in the district except at this Home. Every possible means were taken to control the disease by disinfection, boiling of milk, cleanliness, and precautions as to food, all without avail. The medical officer of health, warned by previous experience in diphtheria, shrewdly suspected a human "carrier," and the girls, *but not the staff*, were systematically examined by the Widal test. Still the outbreak went on, and did not cease until the Home was closed at the end of September and the children boarded out at various other homes. The cook left to take a private situation. This history might have been held to afford a fairly complete example of an outbreak of typhoid fever due to "insanitary" local conditions. It now

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(1) Annual Report of the medical officer of health (Dr. J. C. Heaven) to the Keynsham Rural District Council, Somerset, for the year 1904.

appears, however, that on February 3, 1904, Mrs. H., *the same woman who was in* 1906 *cook and dairymaid at Brentry*, had been transferred from the Bristol Workhouse to assist at Grove House, Brislington, in the kitchen. She proved so satisfactory that on May 2 she was taken on as a paid servant, with rations and lodgings. Her duties were to generally assist in the kitchen and to cook ; she received the milk from the tradesman, and attended to its boiling and preparation for consumption by the children. All the milk was kept in the kitchen.

On May 16 the first case of typhoid appeared. Cases continued through June, July, August, and September. The cook left to take a private situation on September 2. The last case was notified twenty days after, on September 22, and the Home was closed at the end of September.

Quiescent Periods.—The occurrence of quiescent periods during which either no typhoid bacilli are extruded or, if extruded, fail to become effective, has been noticed by more than one observer. In this connection we may draw attention to the fact that both the Bristol outbreaks presented a period—at Brentry lasting from December to May, at Brislington from February to May—during which the carrier, although engaged in her usual occupations, proved ineffective ; but from May onwards in each year the power of infection was markedly developed. This " close " time for typhoid carriers, roughly corresponds to the seasonal incidence of typhoid prevalence in communities. As pointed out above, examination of Mrs. H.'s stools, which proved negative during November, gave a positive result on December 20th. In January, 1908, an examination proved negative, and three examinations of Mrs. H.'s dejecta during February, 1908, also failed to disclose the presence of the *Bacillus typhosus ;* it continued absent until the middle of April, when it was again demonstrated in the stools. Allowing for the normal incubation period of typhoid fever, the outbreak would probably have recommenced in May, as it did at Brislington in 1904, and at Brentry in 1907.

III.—COMMENCING OUTBREAK AT A CLIFTON HOME FOR GIRLS.

Another suggestive fact has been communicated to me by Dr. George Parker. On March 4, 1905, Mrs. H. was taken on as cook at a children's home in Clifton, where there are thirty girls. Nothing happened until May 8, when one of the girls duly developed typhoid fever, for which no reasonable cause could be found. Mrs. H. left at the end of April ; no further cases occurred.

The recurrence of the May date as the period when infection commenced is quite remarkable, in conjunction with a similar experience in the other outbreaks associated with the same "carrier."

The Mechanism of Infection.—There is apparently little doubt that the transference of infection by carrier cases may be defined as "gross" and that definite though minute amounts of infective material are conveyed into the food or milk by the hand of the carrier through carelessness and neglect to wash the hands after attending to the calls of Nature. Mittman has described in Virchow's *Archiv* [13] the finding of various micro-organisms, including bacilli, under the finger nails of schoolboys, waitresses, cooks, and others, and the subject hardly needs elaboration, though it suggests uncomfortable thoughts anent "our daily bread." It is significant that, although the proportion of convalescents from typhoid fever who become carriers is quite substantial (Klinger gives 1·7 per cent. and Lentz 4 per cent., while Savage [15] considers these figures too low, few except those engaged in food preparation, achieve distinction ; and that the two known outbreaks in the neighbourhood of Bristol were actually due, not to two distinct persons, but to the same cook-carrier. A. and J. C. G. Ledingham, however, found [12] that carriers not specially engaged in food work were occasionally effective.

Prophylaxis may obviously be directed to at least three points : (1) Revised criteria for determining recovery after typhoid fever and the adoption of a prescribed routine for registration of, and bacteriological control over, all convalescents ; (2) meanwhile, self-defence indicates the necessity for greater care in selecting kitchen and dairy workers for home or institution. As in the eighteenth century servants were in request who had passed through the small-pox, so in the twentieth century the competence of a cook may justly include her incompetence as a " carrier " ; (3) the urgency for stringent care as to hand cleanliness before commencing or resuming food preparation or dairy work is too obvious to need insistence ; hand-washing drill should become a routine part of institution discipline.

Cure.—Unfortunately, the various drugs and intestinal antiseptics hitherto used have met with pronounced failure. Dehler (1907) has actually performed cholecystostomy and drainage of the gall-bladder, which seems to be followed by gradual disappearance of the bacilli, and possible cure ; but, as Ledingham pertinently observes, this treatment cannot be expected to become popular. Horton Smith suggested in 1900 (op. cit.) that typhoid bacilli in small numbers may be rapidly destroyed as soon as they come in contact with the other micro-organisms in the alimentary canal, for the toxins of not a few of them are extremely inimical towards the typhoid bacillus. Can bacterial methods be looked to for a solution of the problem ? Meanwhile, what is the legal status of a " carrier " capable of distributing disease and death ? Are such persons " suffering " from a dangerous infectious disorder, and can they be placed under any statutory restrictions ?

Table I.—Showing Total Inmates and Staff, also Attacks and Deaths, Brentry, 1906–7.

		No.	Attacked.	Percentage.	Died.
A.—Inmates ..	Total inmates, 240 .. .. F.	105	11	10·4	—
	M.	135	5	3·7	1
B.—Officers, including indoor attendants, police constables, and workmen engaged permanently or temporarily during the year	Resident, on full board .. F.	15	3	20·0	—
	M.	9	2	22·2	—
	Non-resident, partial board (tea-milk) M.	19	3	15·6	1
	Resident off premises, no food M.	9	—	—	—
	Resident off premises (workman), milk on one occasion only, September 28, 1907, sickened October 14, 1907 (denies drinking milk) .. .. .. M.	—	1	—	—
		292	25	8·5	2
C.—Others	Visitor (tea and cream) on one occasion only, tea party of July 31, 1907, sickened August 20, 1907 .. F.	—	1	—	—
	Gardener's wife, lives at lodge, receives milk from Institution .. .. F.	—	1	—	—
	Police Constable's wife, non-resident, probably contracted from husband F.	—	1	—	—
		—	3	—	—

To these may be added the doctor's little boy, who developed suspicious symptoms consonant with mild typhoid on June 20 (Widal negative).

The incidence is heaviest on the male and female officers on full board (including extra milk) and next on the non-resident male officers receiving tea-milk. The incidence on the female inmates was restricted to those who helped in food preparation or received extra milk, and on the male inmates to those who helped in food preparation (messroom attendants, having access to milk).

Table II.—List of Cases of Typhoid Fever at Brentry.

Case.			Approximate date of sickening.	Sex.	Description of Patient.	How employed.	Source of Infection.
			1906				
	1	N.B.	Sept. 16	F.	Inmate	Kitchen	
	2	A.H.	Nov. 11	F.	,,	—	Extra (1 pint) milk for nursing
	3	P. C. P..	,, 11	M.	Officer (cottage)	Lives out	No food but milk
City	4	Mrs. E.	,, 11	F.	Gardener's wife	—	Lives in Lodge, receives milk
			1907				
	5	Mrs. P.	Jan. 9	F.	Wife of No. 3	Lives out	Probably contracted from nursing husband
	6	A. St.	May 4	F.	Inmate	Tea house	Messroom maid
	7	S. Sp.	July 4	F.	,,	—	Extra (1 pint) milk for nursing
	8	A. Sp.	,, 4	M.	Baby	—	
	9	A. A.	,, 11	M.	Inmate	Wing	Messroom attendant [1]
	10	A. R.	,, 13	F.	,,	Kitchen	
	11	E. L.	,, 20	F.	,,	Tea house	Messroom maid; milk stands here from 2 p.m. to 4 p.m.
	12	G. G.	,, 26	F.	,,	Pantry	Attendant on officers; dining-room maid [1]
	13	Miss H.	Aug. 8	F.	Officer	Kitchen	On full board
	14	N. V. B.	,, 8	M.	Carpenter	—	Gets board (officers' rations) [2]
	15	M. J.	,, 10	F.	Inmate	Laundry	Extra (1 pint) milk for nursing
D.	16	R. G. M.	,, 13	M.	Officer	Lives out	Receives no food but milk; died
	17	C. W.	,, 20	M.	Inmate	—	Messroom attendant, followed No. 9 in his duties
D.	18	H. R.	,, 20	M.	,,	—	Ditto, ditto; died
City	19	Miss C.	,, 20	F.	Matron	—	Infected at tea-party, July 31
,,	20	Miss F.	,, 20	F.	Visitor	—	Ditto
	21	H. P.	,, 27	F.	Inmate	Tea house	Messroom maid, followed No. 11 in duty here; milk stands here from 2 p.m. to 4 p.m.
	22	W. W.	Sept. 19	M.	,,	—	Attendant [1]
,,	23	E. C.	Oct. 14	M.	Stoker	Lives out	Only had one meal in institution, September 28, 1907 (denies drinking milk supplied)
,,	24	L.P.	,, 31	M.	Engineer	,,	Has milk occasionally to use for tea
	25	A.W.	Nov. 7	F.	Inmate	Pantry	Attendant on officers; dining-room maid
	26	S. B.	,, 9	M.	Officer	—	Indoor Officer, full board
	27	Miss P.	,, 13	F.	,,	—	Ditto
	28	A. S.	,, 24	F.	Inmate	Kitchen & scullery	

[1] Inmate attendants clear tables after food and have special access to food and milk.

[2] Inmates receive an allowance of a quarter of a pint of milk daily, which is put directly into boiling tea in a large can; only inmate attendants have access to milk. Officers receive half a pint, part of which is used cold for porridge.

Total, 28 Inmates (including baby) .. {M. 5, F. 11} 16 Officers .. {M. 6, F. 3} 9

Also two officers' wives, one visitor, and (?) the doctor's little boy.

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Diphtheria—Membranous Croup.

During the 52 weeks of 1907, 915 cases were notified as Diphtheria, and 11 as Membranous Croup—a total of 926 under these two headings.

The number of deaths returned as due to Diphtheria was 65, and to Membranous Croup 3, or a total of 68 under the two headings, giving a case mortality from these causes of 7·3 per cent. The case mortality observed in 1894 was 39 per cent. ; much of this difference is apparent only, as large numbers of very mild cases, which in 1894 would have escaped observation, are sought for now by systematic bacteriological examination : this causes the figures as to case-mortality to be somewhat misleading.

The 68 deaths from Diphtheria and Membranous Croup correspond to a death-rate from these causes of 18 per 100,000 living, compared with a rate of 22 in 1906, 16 in 1905, of 30 in 1904, of 35 in 1903, and of 54 in 1902.

The Diphtheria rate (including Membranous Croup) for the 76 great towns in 1907 was 17.

Diphtheria (including Membranous Croup) for 18 years.

Years	1 Cases Notified	2 Attacks per 100,000 Living	3 Deaths	4 Deaths per 100,000 Living	5 Case Mortality per Cent.
1890*[2]	56	25	16	7	28·5
1891	70	31	16	7	22·8
1892	106	47	38	16	35·8
1893	141	59	53	23	37·5
1894	128	56	50	22	39·0
1895	165	69	34	14	20·6
1896	258	111	38	16	14·7
1897	205	88	36	15	24·7
1898*	217	68	44	13	20·2
1899	215	67	33	10	15·3
1900	512	157	103	31	21·1
1901	908	275	124	37	13·6
1902	1,109	325	189	51	17·0
1903	1,134	331	119	35	10·4
1904‡	1,051	305	105	30	9·9
1905	1,021	281	59	16	5·7
1906	839	231	82	22	9·7
1907	926	251	68	18	7·3

* Enlarged City. ‡ City again extended in 1904.

*[2] Notification commenced February 12th, 1890.

Diphtheria—Showing incidence of Cases and Deaths on the Sub-Districts of Bristol, 1907.

Incidence Rate per 100,000 Population.	Cases.	REGISTRATION SUB-DISTRICT. POPULATION.	Deaths.	Death Rate per 100,000 Population.
180·8	83	Ashley 45,909	11	23·9
365·5	251	Bedminster 68,652	19	27·6
202·4	81	Bristol Central 40,011	9	22·4
159·5	71	Clifton 44,509	1	2·2
181·1	30	Knowle 16,558	1	6·0
196·9	133	S. George 67,533	7	10·3
246·2	119	S. Philip 48,310	12	24·8
399·1	102	Stapleton 25,547	4	15·6
191·7	21	Westbury-on-Trym 10,950	1	9·1
—	28	Arising in Municipal Institutions	—	—
—	7	Not belonging to Boro'	3	—
251·6	926	**City** 367,979	68	18·4

Diphtheria—Notifications in each Quarter in the Sub-Districts of Bristol, 1907.

	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Year.
Ashley	28	18	16	21	83
Bedminster	63	28	53	107	251
Bristol Central	13	29	19	20	81
Clifton	16	24	14	17	71
Knowle	8	4	10	8	30
S. George	35	18	33	47	133
S. Philip	33	50	18	18	119
Stapleton	41	16	13	32	102
Westbury-on-Trym	13	4	1	3	21
Arising in Municipal Institutions	13	3	4	8	28
Not belonging to Boro'	2	2	3	—	7
CITY	265	196	184	281	926

Diphtheria in Bristol since 1900.

(Full details are given in the Annual Report for each year).

1900 Virulent diphtheria introduced into Bristol south (Bedminster). Scattered, no special school incidence, extended to Totterdown, prevalence declining at end of year.

1901 In March, a school outbreak at Totterdown, controlled by special medical aid in school inspection, culture-taking from contacts, isolation, and control of school attendance.

Redcliff invaded, apparently from Bedminster, school outbreak controlled with some difficulty. Hotwells invaded. Avonmouth invaded.

1902 Early in February a sharp school invasion began, special medical assistance succeeded in promptly arresting the outbreak.

St. George invaded in same month, the Two Mile Hill School, with 1,100 scholars implicated. The school outbreak was got in hand, but the disease spread in the district. The medical assistance afforded was intermittent, and in each interval the disease gained headway, out-patient treatment was afforded for suspicious (Hofmann) cases, in addition to Hospital isolation for virulent cases.

1903 In the early part of the year the disease fluctuated between St. George and Bedminster, special medical aid, and out-patient treatment was afforded in both districts, and continued up to June, improvement followed.

In March a visitor started a fresh outbreak at Avonmouth, soon controlled. In August a visitor from London started an outbreak in a Charitable Institution, which caused trouble for some weeks.

In November the Chester Park Council Schools at Fishponds (Stapleton), were invaded: the school outbreak subsided, home infection by undetected cases kept the disease alive in the district, and it gained considerable hold.

1904 Continuance of the Fishponds outbreak up to the middle of the year, a special Report was presented in June: out-patient treatment was established as in the other districts, and through the autumn the outbreak declined. This district was more difficult to work than any other of the invaded areas, considerable opposition was offered, in consequence of which the district suffered heavily.

1905 Some continuance of Diphtheria was noted in Fishponds. Objection to throat or nose examination continued, in one case where this was refused the whole family subsequently suffered. But medical inspection was continued as efficiently as possible, and by the end of February considerable improvement had resulted.

In March, recrudescence occurred at Avonmouth in houses affected previously in 1900-1901, but was soon controlled.

In September, Diphtheria appeared in two Horfield Schools, medical examination was instituted, the district generally co-operated in the measures, and in a few weeks the outbreak was under control.

1906 In this year no special school infection occurred, and the total number of known cases declined. The type of Diphtheria was, however, somewhat more severe, and the deaths exceeded those in 1905, but were considerably less than those recorded in the previous five years.

Diphtheria in 1907.

In February a letter was received from the Secretary of the Bristol Education Committee, calling attention to the occurrence of Diphtheria at a School in Bedminster. The district in which this School was situate had been under observation for some time before the end of 1906. There were 372 scholars on the School Register, of whom 106 were infants, and of 14 known cases up to February 12th, 10 occurred in the Infants' Department, and 4 amongst the older children. A medical inspection of the scholars in class, and also of the children absent from school was instituted, one Throat and one Nasal case were found amongst the scholars attending the School; also one Throat and two Nasal cases amongst children examined at their homes.

An outbreak also occurred about this time at a local School, where 27 cases were reported, 18 of whom were removed for treatment to the City Hospitals. The rest of the cases were treated at the School ; two nurses being lent from the City Hospitals to assist the Medical Attendant.

An outbreak of Nasal Diphtheria, also occurred at this time at the Bristol Guardians' Homes, Fishponds, where 8 cases were reported.

In April, 8 cases were reported from a local Institution ; 7 of the cases were removed to the City Hospitals and the outbreak then died out.

In May, owing to the occurrence during March and April of seven cases, two fatal, amongst children attending a School in Baptist Mills, a Medical examination was made of 190 Scholars and 12·5 per cent. of these were found on Bacteriological evidence to be in an infectious state. The infection had been going on for some time but yielded readily when prompt and direct action was taken.

In November, an outbreak also occurred at another Bedminster School, in an Infant Department. This Infant Department is badly housed in a Methodist Chapel not well ventilated, and in which occupation is almost continuous with school in day, meeting in evenings, and services on Sundays, so that there is no time to properly ventilate. The means of ventilation are also inadequate. All the children on the register in the Infant Department were examined and visited at their homes, with the result that 11 positive cases were found, 10 in the Infant Department, and one (a brother of an infant) in the big school ; a 12th case, a sister of one of the discovered infants, attended another school and was found on visiting the house to be suffering from Diphtheria. In addition to these 12 cases found, six other cases in contacts at home of children detected by examination have been dealt with.

This makes a total of 18 notified cases as the result of the school examination.

The foregoing facts show that, although Diphtheria has shown an almost continuously decreasing fatality since 1902, school attendance is still an important factor in determining the spread of infection, owing to the influence of close *personal* contact. There is only one effective method of dealing with Diphtheria, which has no direct relationship to the " Sanitary " condition of a school, and that is by a prompt and careful examination by bacteriological methods of the throats and noses of children in infected classes, and of contact cases at school or at home ; furthermore, this examination needs to be made by an examiner of special experience and careful judgment, or it is very likely to prove useless. Popular opinion looks to frequent and elaborate disinfection of school premises in these outbreaks, and there is no particular objection to this being carried out on the general score of cleanliness, provided the essential bacteriological examination is also instituted. The importance of mere disinfection in this disease may, however, be greatly overestimated, just as the cardinal importance of personal contact, and the influence of mild cases (carriers) whether of throat or nose Diphtheria, have been fatally underestimated.

Comparative Table showing Diphtheria Mortality.

(*From the Registrar General's Annual Summary.*)

	Death Rates from Diphtheria per 100,000 Living.									
	10 years' Average, 1890-99,	1897-06	1900	1901	1902	1903	1904	1905	1906	1907
*76 Towns ..	—	†20	—	—	26	20	19	16	19	17
33 Towns ..	33	—	35	30	—	—	—	—	—	—
London	49	28	34	29	25	16	16	12	15	16
West Ham	51	45	50	62	46	26	15	26	29	24
Croydon	29	16	18	16	21	12	17	16	27	27
Brighton	20	27	58	51	28	26	12	4	9	12
Portsmouth ..	23	38	53	37	34	39	36	34	29	29
Plymouth	13	13	11	11	13	13	12	15	18	13
Bristol	**14**	**27**	**31**	**37**	**54**	**35**	**30**	**16**	**21**	**17**
Cardiff	40	39	42	46	52	20	18	13	7	12
Swansea	33	48	58	18	25	22	25	20	7	12
Wolverhampton	35	23	10	12	20	9	18	18	23	26
Birmingham ..	24	22	14	16	24	26	24	17	18	18
Norwich	21	17	10	26	9	11	7	20	25	38
Leicester	27	46	151	71	15	13	3	5	13	7
Nottingham ..	8	16	12	12	12	26	28	19	16	16
Derby	11	16	6	19	10	3	25	19	50	42
Birkenhead	23	24	9	25	24	10	24	28	23	20
Liverpool	20	25	26	27	30	23	27	21	20	15
Bolton	10	13	12	16	25	21	16	10	12	12
Manchester	21	18	18	24	21	24	17	20	19	16
Salford	34	36	41	63	33	38	49	36	39	31
Oldham	15	18	13	9	33	39	25	9	12	13
Burnley	26	30	19	40	45	20	12	19	14	14
Blackburn	12	30	65	49	17	20	8	24	19	13
Preston	12	19	38	15	24	18	20	16	14	10
Huddersfield ..	13	12	2	6	13	15	15	11	14	8
Halifax	15	16	13	17	8	9	16	26	39	26
Bradford	8	21	11	11	30	19	57	28	21	15
Leeds	23	33	59	40	21	15	10	10	18	14
Sheffield	29	43	126	64	27	9	11	13	19	12
Hull	12	23	8	17	35	31	25	30	52	25
Sunderland	7	14	15	20	10	21	18	20	22	27
Gateshead	13	12	5	11	10	10	12	16	28	25
Newcastle	18	16	14	15	10	17	22	19	24	19

* The Registrar General now gives the rates for 76 of the large towns, and these rates are no longer comparable with the previously given rates for the 33 largest towns.

† Average rates for the *Five* years 1902-6 only.

The Health Committee during the year have supplied 220,000 units of Diphtheria antitoxin free to Medical Practitioners upon application, for 55 patients whose parents were certified as unable to afford to pay for this : an average of 4,000 units for each case.

Laboratory Examinations in Diphtheria and Enteric Fever.

	Diphtheria.	Enteric Fever.	Total.
1895	87	—	87
1896	206	—	206
1897*	379	254	633
1898	390	127	517
1899	485	290	775
1900	915	452	1,367
1901	2,527	425	2,952
1902	3,771	420	4,191
1903	5,545	240	5,785
1904*2	6,858	308	7,166
1905	6,469	161	6,630
1906	4,738	219	4,957
1907	6,549	166	6,715

* City enlarged in November, 1897.

*2 City enlarged in October, 1904.

In November, 1902, this work, which had for seven years been voluntarily undertaken by the Medical Officer of Health, was transferred to Professor Kent, of the Bacteriological Laboratory, University College, Bristol; and in 1906 was transferred to the City Analyst.

Cholera—Choleraic Diarrhœa.

No deaths occurred from this disease during 1907, and no cases were notified ; although it is not unusual during the late summer or autumn to have one or two fatal cases of acute Diarrhœa notified under this heading. The importance of this question is, in a Sea-port Town, to exclude the possibility of true Asiatic Cholera

Plague.

No suspicious cases were introduced.

Diarrhœa—Infantile Diarrhœa.

The number of deaths returned as due to Diarrhœal diseases during the year was 133 compared with 213, 169, 206, 107, 165, 345, and 348, fatal cases recorded in the previous seven years. Of the 133 deaths 104 occurred in children under 1 year of age, 21 at ages 1 to 5, one at ages 25 to 65, and seven in persons aged 65 and upwards. These deaths give a Diarrhœal death-rate of 0·36 per 1,000 living.

The comparative rates here given, show that favourable conditions exist in this City.

Comparative Table showing Diarrhœa Mortality.

(*From the Registrar General's Annual Summary*).

	Death Rates from Diarrhœa per 100,000 living.								
	10 years' Average		1901	1902	1903	1904	1905	1906	1907
	1890-99.	1897-1906.							
*76 Towns.	—	‡89	—	54	71	120	83	116	40
33 Towns.	96	—	123	—	—	—	—	—	—
London	74	85	87	54	64	104	73	94	32
West Ham...	89	155	195	85	111	208	159	188	66
Croydon	59	70	92	49	28	64	33	96	42
Brighton	81	75	89	39	40	43	37	55	33
Portsmouth .	95	117	165	80	59	108	86	111	29
Plymouth ...	73	90	82	45	49	102	80	72	34
Bristol	**63**	**60**	**45**	**38**	**28**	**51**	**36**	**54**	**32**
Cardiff	87	66	44	27	46	72	32	79	34
Swansea	42	57	44	49	48	77	46	82	52
Wolv'rh'mpt'n	137	139	116	78	90	165	128	132	49
Birmingham	123	138	147	71	111	176	83	158	43
Norwich	100	120	124	63	75	118	119	155	46
Leicester	152	122	132	59	60	131	93	113	31
Nottingham .	111	125	151	72	68	137	76	152	63
Derby	76	71	97	42	38	68	61	53	20
Birkenhead .	83	114	140	60	118	154	101	175	31
Liverpool ...	132	161	195	94	98	252	135	179	73
Bolton	138	120	141	39	90	94	105	115	41
Manchester .	129	142	185	53	89	137	115	153	50
Salford......	154	157	191	64	98	166	121	144	44
Oldham	70	82	121	31	42	91	72	119	53
Burnley	134	165	183	59	140	201	137	201	69
Blackburn ..	131	102	158	40	52	81	64	107	28
Preston	211	179	182	144	103	143	132	196	54
Huddersfield	41	60	90	19	26	51	44	90	22
Halifax	32	36	47	21	16	34	25	30	18
Bradford ...	91	79	89	18	51	83	50	93	17
Leeds	109	104	144	60	63	99	79	97	38
Sheffield	135	153	211	56	127	135	152	171	99
Hull	145	157	180	41	125	208	128	161	37
Sunderland .	123	112	178	49	60	109	83	108	45
Gateshead ..	107	121	255	37	91	113	68	162	37
Newcastle-on-Tyne	73	78	124	26	58	51	58	103	14

* The Registrar General now gives the rates for 76 of the large towns, and these rates are no longer comparable with the previously given rates for the 33 largest towns.

† Average rates for the *five* years 1902-6 only

Erysipelas.

During the year 1907, 244 cases of Erysipelas were notified, and 10 deaths were returned, compared with 239 cases and seven deaths in 1906. In houses where cases were notified, various insanitary conditions were found to exist and were remedied.

Puerperal Fever.

Thirty-six cases of Puerperal Fever were notified, compared with 37 last year. Eleven cases proved fatal, compared with 23 in 1900, 17 in 1901, 17 in 1902, 14 in 1903, 16 in 1904, 6 in 1905, and 14 in 1906.

Typhus Fever.

No case of Typhus Fever was notified in the City during the year. This disease disappeared when Registration of Common Lodging Houses and control of gross insanitary conditions were taken in hand in the sixties and seventies of last century.

Measles.

The deaths from Measles in the City in 1907 numbered 36 compared with 140 in 1906, 180 in 1905, 94 in 1904, 11 in 1903, 411 in 1902, with 7 in 1901, with 200 in 1900, 38 in 1899, 309 in 1898, 57 in 1897, with 143 in 1896, 8 in 1895, 116 in 1894, 25 in 1893, 105 in 1892, and 239 in 1891. These fluctuations are characteristic of Measles prevalence in large centres of population.

Of the 36 deaths, 34 occurred in children under 5, one between 5 and 15, and one between 25 and 65.

In the first quarter three deaths occurred, six in the second, four in the third, and 23 in the fourth quarter.

Measles is the cause of much mortality, and is very important in relation to school attendance.

No two authorities seem agreed upon the best measures for the repression of Measles epidemics, and the disease has up to the present risen and fallen in alternate years practically unchecked.

The difference in procedure is shown thus :—

School Closure. In 9 out of 67 towns no closure is attempted, in 10 it is only carried out when the attendance is seriously affected (i.e., too late to act as a preventive measure), in 24 the Infant Departments only are closed, in 13 the whole schools are closed at one or other stage of an epidemic.

Exclusion of Contacts. In 7 towns no action is taken.

Sunday Schools. In 25 towns nothing is done, in 18 closure is occasionally advised, in 18 it is advised as a routine proceeding. In Reading, Parliamentary powers have been obtained to close Sunday Schools or private schools if necessary.

Notification. In England and Wales notification obtains in 55 towns and 21 rural districts, and has been given up in 54 districts after trial.

Disinfection is not carried out at all in many towns, and at the height of an epidemic could not be coped with without much extra assistance.

Of the deaths from Measles, 90 to 95 per cent. occur in children under 5 years of age ; it is most fatal in the second year of life, and the attack incidence is highest during the third, fourth, and fifth years.

The most effective method of many that have been tried, appears to be, if taken early, school examination ; or, later, a combination of school closure and house-to-house visitation, obviously requiring much extra assistance.

1. If Measles is due, but has not yet burst into epidemic form, careful class-to-class medical inspection of the Infant Departments may result in discovering many early cases; this inspection must, however, be persevered in over some months.

2. If the epidemic has started in the school, the closing of the Infant Departments, followed by careful and persistent following up of cases by house-to-house visitation, advice, and disinfection, has proved most satisfactory in small districts; in larger centres of population it is a counsel of perfection, which could only be ensured by the provision of a largely increased Staff—medical, inspectorial, and cleansing.

(See also Dr. Howard Jones' Paper, "The Control of Measles," Public Health, 1904).

The relative fatality for a period of 10 years in the City of Bristol from various diseases is here shown, and Measles is found to occupy a most prominent place amongst the causes of school mortality.

	1898–1907. Deaths.
Diarrhœa	1931
Measles	1426
Whooping Cough	1011
Diphtheria	927
Enteric Fever	299
Scarlet Fever	345
Small-pox	7
Typhus Fever	0

The whole question is well summed up in the Report by Dr. Thomas on Measles, contained in Dr. Kerr's Report to the London County Council (Education Committee) for the year ending March 31, 1905:—

"Measles at present in London only spreads in "classes under 5 years of age, except in certain

" better-class districts. Seventy-five per cent. of " children above 5 in Infants' Departments are " protected."

" Measles tends to spread whenever a class accumu- " lates unprotected members to the extent of between " 30 per cent. and 40 per cent., and when spread has " begun it continues until the proportion is reduced " to between 15 per cent. to 20 per cent. unprotected."

" If children under 5 were excluded from school, " closure for Measles would not be necessary for " some time in London, except in one or two special " districts; if, however, this were successful in " postponing attacks, the question would again " become acute in a few years."

" To deal efficiently with Measles accurate " knowledge is required; the measles history should " be elicited for each child on admission to school. " This should be done universally; if notification " to School Authority was made compulsory on " every parent whose children attended school, our " hands would be greatly strengthened. Unless the " amount of susceptible material is fairly accurately " known for each school, we shall only be working in " the dark as heretofore, and nothing of any value " can be expected to accrue from our methods."

" To effect any useful purpose school closure " must take place before the " first crop " falls. " The old practice of waiting until the attendance " fell to a certain limit was useless in arresting the " spread of Measles, and did absolutely no good."

" The means of arresting spread of measles other " than school closure are of enormous importance; " to name two—sanitary buildings and training of " teachers; these two factors probably have the " greatest effect of all in determining the extent of " spread of an outbreak."

"Deaths often occur from ignorance on the part "of parents."

"Circulars should be sent out wherever measles "has appeared in a class (i.e., on the incidence of "the first case) begging mothers to notice colds, "and upon the slightest suspicion of such symptoms "to keep the child at home for a day or two. In "this way measles would probably be checked to a "far greater extent than has been effected by any "other means."

"Measles never spreads in the Boys' and Girls' "Departments. There is no need to exclude children "from infected homes who attend the upper depart- "ments. As a result of our enquiries, this has "actually been carried out at Brighton, with satis- "factory results."

"There is too great a tendency to look at things "from an "attendance" standpoint; this is one of "the greatest evils with which we have to contend. "The withdrawal by the Board of Education of "Article 101, was the greatest piece of official folly "ever perpetrated. If a whole department is closed "the average attendance is not affected; but if on the "score of health a single class is closed by order of "Sanitary Authority, or by the Council's Medical "Officer, it is supposed that the attendances are "missed, and the effect upon the average attendance "and consequent grant is enormous. We thus have "great difficulty in carrying out our measures, as "much opposition is often encountered to the "necessary closure of a single class, while the "unnecessary closure of a whole department is gladly "borne or even welcomed."

"This is an economic question which is not one "of health at all; and when attendance has fallen "to a certain percentage at which the loss of grant "is so severely affected, the department should be "automatically closed independently of the question "of health. This percentage ought to be worked "out."

Whooping Cough.

The deaths from Whooping Cough in the City numbered 35 compared with 102 in 1906, 123 in 1905, 110 in 1904, 65 in 1903, 105 in 1902, 189 in 1901, 54 in 1900, 118 in 1899, 110 in 1898, 118, in 1897, 64 in 1896, 45 in 1895, 177 in 1894, 80 in 1893, 154 in 1892, 53 in 1891, and 201 in 1890.

Sixteen of the deaths occurred in children under one, 17 at the ages one to five, and two at ages five to fifteen.

In the first quarter of the year nine deaths occurred, eight in the second, nine in the third, and nine in the last quarter of the year.

The disease was most fatal in Bedminster (13), St. Philip (6), St. George (5), and Ashley (5).

The mortality in this disease is largely due, as in the case of Measles, to the want of care exercised during the course of the illness, to avoid exposure to inclement weather. It bears a similar relation to school attendance to that noted in the case of Measles, and is very fatal at ages under five.

Influenza.

This disease was credited with 55 deaths during 1907, compared with 47 in 1906, 54 in 1905, 27 in 1904, 33 in 1903, 56 in 1902, 65 in 1901, 53 in 1900, 119 in 1899, 57 in 1898, 40 in 1897, 19 in 1896, 95 in 1895, 26 in 1894, 68 in 1893 and 45 deaths during 1892.

Influenza was chiefly returned as a cause of death during the first quarter of the year, and the figures for the four quarters are 41, 7, 2, and 5 respectively.

Cerebro-Spinal Fever.

Owing to the prevalence of Cerebro-Spinal Fever in Belfast and Glasgow, the Bristol City Council, on the recommendation of the Bristol Health Committee, resolved

> " That the Infectious Disease (Notification) Act, 1889,
> " shall apply in the City and County of Bristol to
> " the Infectious Disease known as Cerebro-Spinal
> " Fever, and that this order shall come into operation
> " on the 25th day of March, 1907, and shall continue
> " in force during six calendar months from that date."

On March 23rd a Memorandum to this effect was sent to all the Medical Practitioners in the City.

Only one case was notified—a boy of 17—who was removed to the Bristol Royal Infirmary, and died the day after removal.

Memorandum to Medical Practitioners.

CITY OF BRISTOL.

Cerebro-Spinal Fever.

The City Council has considered it expedient that the disease should be added to the list of diseases compulsorily notifiable in the City, from March 25th, 1907, to September 25th, 1907.

The Health Committee desire to emphasize the fact that there is no present reason to fear the invasion of the City by Cerebro-Spinal Fever, but that as occasional cases have occurred in the past, it is possible they may again, and it is well to be prepared against such a contingency.

In the event of a definitely suspicious case occurring in the practice of a Medical Practitioner, it would be well, if possible, to obtain a second opinion, and thereupon to notify the case to the Medical Officer of Health.

If the case is suggestive enough to be notified, immediate removal to a Hospital should be urged, and arrangements are being made by which this may be possible, so as to secure every modern aid towards confirmation of the diagnosis and effective treatment.

Cases should be treated as infectious, much in the same way as Scarlet Fever, or Diphtheria. Disinfection will be carried out in each case.

D. S. DAVIES, M.D.,
Medical Officer of Health.

Public Health Offices,
40 Prince Street, Bristol.
March 20th, 1907.

TUBERCULOSIS.

Phthisis (Pulmonary Consumption).

The fatality of Pulmonary Phthisis, and of other Tubercular Diseases, in comparison with that from the seven principal zymotic diseases is shown here for fourteen years.

	1894	1895	1896	1897*	1898	1899	1900	1901	1902	1903	1904†	1905	1906	1907
Phthisis	332	317	370	302	393	430	415	401	415	366	413	407	404	384
Other Tubercular Diseases ...	136	136	129	136	178	180	145	139	162	154	144	152	137	114
Seven Principal Zymotics ...	457	268	435	430	851	582	606	530	942	375	578	583	585	314

* City enlarged in November, 1897.

† City enlarged in October, 1904.

In 1899 a systematic examination of the milk from all farms supplying the City was carried out by Professor Delépine, of Manchester. Out of 74 samples examined, only 4 showed the presence of Tuberculosis. The samples were taken from the milk as brought into the City for delivery.

All meat and milk contracts for the City and Port Hospitals are framed upon conditions protective against Tuberculosis.

The Bristol City Council, on the recommendation of the Health Committee, has made the following arrangements for dealing with consumption in the City :—

Winsley Sanatorium. They have contributed a sum of £5,000 towards the erection and equipment of the Winsley Sanatorium, and a further sum of £1,300 annually towards the maintenance of 20 beds, to be reserved at their disposal (Resolution of Council of 13th May, 1902, and 8th Dec., 1903). At a Meeting of the Council, on 26th March, 1907, it was resolved that an additional capital sum of £1,000 be contributed, together with an additional annual sum of £100. The Sanatorium was opened in the early part of December, 1904. The first Bristol case was admitted on 27th February, 1905.

Notification. In September, 1903, the Council approved of the initiation of a voluntary system of notification of Phthisis. Leaflets containing "Precautions against Consumption" were distributed through the City, first by the S. John's Ambulance Brigade, later by the Health Committee, and Dettweiler Sputum Flasks are supplied to deserving patients unable to afford the purchase; disinfecting solution for use in the flasks is also gratuitously supplied.

Enquiries and Disinfection. Each week the deaths from "Consumption" are singled out from the death returns and entered upon special enquiry cards. The District Inspectors visit, make enquiries in these, as well as in all notified cases not specially exempted, and secure disinfection of the rooms or premises, and of any articles that need it.

Examination of Phthisical Sputum. The Bacteriological examination of Phthisical Sputum is provided free of cost for Medical Practitioners in regard to City cases. 592 examinations were made during 1907, of which 169 gave positive results.

Notification.

Notification commenced on September 5th, 1905, and 330 cases, 196 Males and 134 Females, were notified up to the end of 1905.

703 cases were notified during the year 1906, 347 Males, and 356 Females.

Notification 1907.

TABLE I. (CASES).

542 Cases were notified during the year 1907, 291 Males, and 251 Females.

SOURCE OF NOTIFICATION.

490 Cases were living at Home.
11 ,, ,, Stapleton Workhouse.
19 ,, ,, Eastville Workhouse.
6 ,, ,, Asylum.
12 ,, ,, Common and Institution Lodging Houses.
1 ,, ,, Royal Infirmary.
3 ,, ,, Other Institutions.

542 Total number notified.

In 300 Cases, Disease was reported as Phthisis of Lungs.
,, 164 ,, ,, ,, limited to Right Lung.
,, 78 ,, ,, ,, limited to Left Lung.

262 Deaths took place in 1907 of notified cases :—
26 of Cases notified in 1905.
121 of Cases notified in 1906.
115 of Cases notified in 1907.

TABLE II. (CASES).

History Table showing Relatives Affected.

135 Cases, History of Phthisis in Family.

	Relation not stated	Father.	Mother.	Husband.	Wife.	Brother.	Sister.	Son.	Daughter.	Uncle.	Aunt.	G.Father.	G.Mother.	Cousins.
Male Cases	1	10	9		2	16	7	1	1	3	1	4	1	1
Female Cases	4	17	11	9		18	15	3	6	3	7		3	

In 18 Cases, history shows more than 2 Persons affected in Family.

TABLE III. (CASES).

Occupation of Notified Cases.

Occupation........	Male.	Female	Total.
Barber	1	—	1
Boot, Shoe, Leather	11	2	13
Builders, Masons, Quarrymen	4	—	4
Butcher	1	—	1
Clerks	19	—	19
Cocoa	3	2	5
Confectionery	1	—	1
Cotton, Clothing, Tailoring	9	27	36
Dentist	1	—	1
Domestics	—	20	20
Drivers, etc.	9	—	9
Engineering—Iron Workers, etc.	22	—	22
Florists, Gardeners	4	—	4
Glass Blower	1	—	1
Hawkers	5	1	6
Holy Orders	1	—	1
Home	1	6	7
Housewives	—	111	111
Institutions	38	11	49
Insurance Agents, Canvassers	6	—	6
Joiners, Carpenters, Cabinet Makers	15	—	15
Labourers	48	—	48
Laundry	—	3	3
Maltster	1	—	1
Miller	1	—	1
Miners	4	—	4
No occupation	7	13	20
Nurses	—	3	3
Painters	2	—	2
Paper, Printing, Stationery	10	9	19
Plasterer	1	—	1
Pottery Workers	1	2	3
Publicans, Barmen	7	—	7
Rag Pickers	—	2	2
Reservists—Army, Navy	10	—	10
Sanitary Inspector	1	—	1
Schools	11	23	34
Seamen	9	—	9
Shop Assistants	4	2	6
Stokers	2	—	2
Teachers	3	4	7
Tobacco, Cigar, Cigarette	6	9	15
Traveller	1	—	1
Undertaker	1	—	1
Unknown	4	—	4
Upholsterers	3	—	3
Waitress	—	1	1
Warehousemen	2	—	2
	291	251	542

TABLE IV. (CASES).

Table Showing number of Persons in Affected House.

Persons in House	1	2	3	4	5	6	7	8	9	10	11	12	13	
Cases ..	2	20	40	93	89	72	60	52	27	24	7	2	2	= 490

Institutions .. 52

542

FAMILIES IN HOUSE.

Families in House	1	2	3	4	
Cases	342	125	19	4	= 490

Institutions .. 52

542

ROOMS IN HOUSE.

Rooms in House ..	2	3	4	5	6	7	8	9	10	11	12	14	
Cases ..	5	10	41	66	286	22	40	8	7	1	2	2	= 490

Institutions .. 52

542

CONDITION OF HOUSE AS TO "CLEANLINESS," "DAMPNESS, VENTILATION & REPAIR," & "DRAINAGE."

	Reported Good.	Reported Fair.	Reported Bad.	None in House.	Institutions.	Totals.
Cleanliness	113	354	23		52	542
Dampness, Ventilation and Repair	70	401	19		52	542
Drainage	175	307	6	2	52	542

30 Notices were issued.

Houses classed as "good" or "fair," may be deemed satisfactory; no action is required in either group.

OVERCROWDING.

Case No. 1532. 8 persons (ages 11, 14, 16, 19, 21, 24, 47, 48), occupied 4 rooms.

TABLE V. (CASES).

Table showing number of persons in, and number of rooms occupied by patient's family.

	Persons in Family	1	2	3	4	5	6	7	8	9	10	11	12	13	
Rooms per Family.	1	27	6	4	.	.	.	.	.	.	.	.	.	.	37
	2	6	20	14	5	2	1	.	.	.	.	.	.	.	48
	3	.	7	14	9	9	8	3	.	1	.	.	.	.	51
	4	1	6	10	13	10	6	5	3	.	.	1	.	.	55
	5	.	2	7	12	11	11	6	8	.	1	.	.	.	58
	6	1	12	19	45	36	35	19	12	9	4	3	1	.	196
	7	.	.	3	3	2	4	3	2	.	1	.	.	.	18
	8	.	2	1	7	3	1	1	4	.	2	.	.	1	22
	9	.	.	1	2	1	.	.	1	.	.	.	.	.	5

	=490
Institutions	52
Cases notified during 1907 ..	542

TABLE VI. (CASES).

Common and Institution Lodging House Cases.

Notified in Common Lodging Houses ..	9	Cases
Notified in Institution Lodging Houses	3	,,
Total number notified.........	12	,,

Admitted to Stapleton Workhouse	9	Cases
Admitted to Eastville Workhouse	2	,,
Remaining in Common Lodging Houses ..	1	,,
	12	

Disinfection was carried out in 5 cases. The average age of these cases was 38 years.

Out-workers.

Two Male and Two Female Out-workers were notified :—

Age—Over 18 years	4	Cases
Total number	4	,,

Two of these were engaged in Tailoring, one in Corset making, and one at Boot Machining.

Milk.

470 Cases—Name of milkman reported
55 ,, Obtained from casual sellers.
17 ,, Used condensed Milk.
154 ,, Milk was boiled before use

Animals Kept.

48 Cases—Kept animals or domestic pets.

Disinfection, etc.

69 Cases—Clothing was disinfected.
90 ,, Bedding was disinfected.
195 ,, Rooms were disinfected.
293 ,, Refused. In many cases the people would like disinfection to be carried out but could not owing to state of health of patient.
330 ,, Laundry, etc., was done at home.

Sputum Flasks, etc.

46 Sputum Flasks were supplied.
375 Bottles of Disinfectant Solution supplied.

Schools.

31 Cases attended the Elementary Day Schools.
3 ,, attended other schools (private, etc.)

TABLE VII. (DEATHS).

Enquiry into 384 Deaths returned from Phthisis.

288 Cases died at Home.
37 ,, ,, Stapleton Workhouse.
28 ,, ,, Eastville Workhouse.
14 ,, ,, Asylum.
8 ,, ,, Southmead Workhouse.
9 ,, ,, Other Institutions.
—
384

Year of Notification of 384 Fatal Cases:—

26 Deaths occurred amongst cases notified in 1905
121 Deaths occurred amongst cases notified in 1906
115 Deaths occurred amongst cases notified in 1907
122 Deaths occurred amongst cases not notified.

384

TABLE VIII. (DEATHS).

Showing Occupations of 384 Fatal Cases.

Occupation.	Males.	Females.	Total.
Baker	1	—	1
Barber	1	—	1
Boots, Shoes, Leather Workers	15	2	17
Butchers	3	—	3
Canvassers, Agents	2	—	2
Clerks	6	—	6
Clothing	9	12	21
Cocoa	1	—	1
Confectionery	1	—	1
Domestic Servants	—	15	15
Drivers of Horses	4	—	4
Gardeners	2	—	2
Gas Worker	1	—	1
Glass Blowers	2	—	2
Hawkers	3	1	4
Home	—	6	6
Housewives	—	93	93
Iron Workers, Engineers	24	—	24
Jeweller	1	—	1
Joiners, Carpenters, etc.	4	—	4
Labourers	43	—	43
Laundry Workers	—	5	5
Lead Worker	1	—	1
Masons	3	—	3
Miners—Pit Labourers	5	—	5
Musician	1	—	1
No Occupation	12	15	27
Navy, Army, Reservists	5	—	5
Nurse	—	1	1
Painters, Decorators, French Polishers	5	—	5
Paper, Printing, Stationery	9	7	16
Photographer	1	—	1
Plasterers	3	—	3
Police	2	—	2
Post Office	2	—	2
Publicans, Barmen	2	1	3
Potter	1	—	1
Railwaymen	5	—	5
Rope Maker	1	—	1
Schools	4	8	12
Seamen	2	—	2
Shoe Black	1	—	1
Shop Assistants	3	2	5
Stage	1	—	1
Stokers	4	—	4
Teachers	1	1	2
Tobacco, Cigars, Cigarettes	6	7	13
Travellers	3	—	3
Unknown	—	1	1
Undertaker	1	—	1
	207	177	384

TABLE IX. (DEATHS).

Housing—Particulars of 384 Fatal Cases.

PERSONS IN AFFECTED HOUSE.

Persons in House	2	3	4	5	6	7	8	9	10	11	12	13	
Cases	10	43	53	55	40	33	18	13	13	4	4	2	= 288

Institutions.......... 96

384

FAMILIES IN HOUSE.

Families in House	1	2	3	4	5	6	
Cases	204	66	15	2	—	1	= 288

Institutions 96

384

CONDITION OF HOUSE AS TO "CLEANLINESS," "DAMPNESS, VENTILATION AND REPAIR," AND "DRAINAGE."

	Reported Good.	Reported Fairly Good.	Reported Bad.	Total.
Cleanliness	57	221	11	288
Dampness, Ventilation, and Repair	40	241	7	288
Drainage.............	78	205	5	= 288

Institutions 96

384

Twenty-two notices were issued.

TABLE X. (DEATHS).

Table showing number of persons in, and number of rooms occupied by Patient's Family.

	Persons in Family.	1	2	3	4	5	6	7	8	9	10	11	12	
Rooms per Family.	1	9	3	1	.	1	.	.	.	.	.	.	.	14
	2	3	11	4	2	.	.	.	.	.	.	.	.	20
	3	.	6	10	9	3	2	5	.	.	.	.	.	35
	4	.	6	7	9	5	3	1	.	.	.	.	.	31
	5	.	1	5	10	5	7	2	2	.	1	.	1	34
	6	.	7	22	25	21	14	15	7	6	6	2	3	128
	7	.	.	1	3	3	2	2	1	.	1	.	.	13
	8	.	1	2	1	2	2	2	.	1	1	.	.	12
	9	.	.	.	1	.	.	.	.	.	.	.	.	1

	= 288
Institutions	96
Deaths during year 1907 ...	384

TABLE XI. (DEATHS).

Milk.

246	Cases—Name of milkman reported.
33	,, Obtained from casual sellers.
9	,, Used condensed milk.
98	,, Milk was boiled before use.

Animals Kept.

30 Cases—Kept Animals or Domestic Pets.

Disinfection, etc.

38	Cases—Clothing was Disinfected.
110	,, Bedding was Disinfected.
214	,, Rooms were Sprayed.
207	,. Laundry, Washing, etc., was done at home.

Onset of Fatal Cases.

Period of time from date of "onset" to death.

		Years.										
Period	Under 6 mths	1	2	3	4	5	6	7	8	9	10	?
Cases	68	53	45	15	15	6	3	3	4	0	7	69 = 288

Institutions......	96
	384

WINSLEY SANATORIUM.

City Maintained Beds, 1907.

During the year 102 Males and 70 Females made application.

The ages of these 172 applicants were 10 under 15; 74 at ages 15 to 25; 88 at ages 25 to 65.

Admitted to the Sanatorium 34 Males, 34 Females. Total 68.

Period of time from date of receipt of application to date of admission.

1	Case	waited	3	weeks.
1	,,	,,	4	,,
4	,,	,,	5	,,
1	,,	,,	6	,,
6	,,	,,	7	,,
7	,,	,,	8	,,
6	,,	,,	9	,,
3	,,	,,	10	,,
2	,,	,,	11	,,
6	,,	,,	12	,,
3	,,	,,	13	,,
5	,,	,,	14	,,
3	,,	,,	15	,,
6	,,	,,	16	,,
2	,,	,,	17	,,
1	,,	,,	18	,,
1	,,	,,	19	,,
2	,,	,,	20	,,
2	,,	,,	21	,,
1	,,	,,	24	,,
1	,,	,,	27	,,
1	,,	,,	28	,,
1	,,	,,	29	,,
1	,,	,,	31	,,
1	,,	,,	43	,,
68	average	=	13	weeks.

Discharged from Sanatorium 32 Males, 36 Females. Total 68.

In the case of some patients delay was due to inability to provide a suitable outfit through poverty, gifts of warm clothing were received from some kind friends, and are always acceptable.

The "Class" into which the 68 Discharged cases were placed on admission to the Institution. (Winsley Resident Medical Officer's selection).

Class	I.	Cases	3
,,	II.	,,	34
,,	III.	,,	31
			68

The following Table shows how the 172 applications were dealt with :—

57 ..	"Selected" and "Admitted."
22 ..	Not accepted by Committee.
13 ..	Rejected by Medical Consultative Board as "not suitable."
6 ..	Reserved by Medical Consultative Board.
13 ..	Withdrawn.
16 ..	Waiting for admission on 28th December, 1907
14 ..	Died since receipt of application.
31 ..	A fresh medical certificate to be sent in.
172	Total.

Condition stated upon discharge.

53 ..	Discharged much improved.
11 ..	Discharged little improved.
4 ..	Discharged not improved.
68	Total.

I remain, my Lord Mayor and Gentlemen,

Your obedient Servant,

D. S. DAVIES, M.D., D.H.P

Medical Officer of Health for the City and County of Bristol, and for the Port of Bristol; General Medical Superintendent City Hospitals; Lecturer on the Principles and Practice of Public Health, University College, Bristol (Medical School); Past-President of the Incorporated Society of Medical Officers of Health; of the Bath and Bristol Branch of the British Medical Association; and of the Bristol Medico-Chirurgical Society; Examiner in State Medicine (M.D. Examination) to the University of London; Member of Board of Examiners of the Royal Sanitary Institute; Late Medical Inspector (on Cholera Survey and General Sanitary Survey of England) to H.M. Local Government Board; Surg. Col. (retd.), V.D., 1st Glos. R.G.A. (V.), etc.

April, 1908.

TABLE B. Showing Population, Births, Marriages, and Deaths, and Birth and Death Rates in Bristol, for the 25 Years, 1883–1907. (All figures revised on 1891 Census).

	Estimated Population.	Registered Births.	*Marriages in the District of the Bristol Union.	DEATHS.					ANNUAL RATES.			
				Total Deaths at all Ages.	Under 1 Year.	Over 1 and under 5.	Over 60.	In Public Institutions.	Birth Rate per 1000.	Death Rate per 1000.	Infantile Mortality to 1000 Births.	Zymotic Rate.
1883	209,522	6,844	1,073	3,795	917	405	1,057	608	32·6	18·1	133·9	1·1
1884	211,048	6,888	1,090	4,023	1,001	538	1,061	653	32·6	19·0	145·3	1·8
1885	212,586	6,786	974	4,281	1,052	639	1,134	629	31·9	20·1	155·0	2·2
1886	214,134	6,724	949	4,253	1,002	619	1,132	694	31·4	19·8	149·1	2·2
1887	215,694	6,619	956	4,542	996	796	1,244	680	30·6	21·0	150·4	3·0
1888	217,266	6,608	981	3,816	824	432	1,138	710	30·4	17·5	124·6	1·3
1889	218,848	6,694	932	4,021	976	595	1,062	660	30·5	18·3	145·8	2·2
1890	220,442	6,634	1,033	4,532	991	597	1,265	730	30·0	20·5	149·4	2·1
1891	222,049	6,725	937	4,631	972	603	1,371	815	30·3	20·8	144·5	1·7
1892	223,592	6,563	973	4,331	953	634	1,197	776	29·3	19·3	145·2	2·0
1893	225,028	6,788	955	4,241	959	411	1,283	851	30·1	18·8	141·2	1·6
1894	226,578	6,393	920	3,888	848	524	1,077	769	28·8	17·1	148·3	2·0
1895	228,139	6,622	846	4,108	935	414	1,321	837	29·0	18·0	141·1	1·1
1896	230,626	6,537	863	3,960	908	476	1,130	793	27·8	16·8	138·9	1·8
1897	232,242	6,514	884	3,988	949	434	1,195	821	28·0	17·1	145·6	1·8
1898	316,900	9,061	837	5,441	1,491	795	1,455	881	28·5	17·1	164·5	2·6
1899	320,911	9,336	2,714	5,844	1,467	567	1,781	1,049	29·0	18·2	157·1	1·8
1900	324,973	8,972	2,839	5,397	1,185	673	1,561	968	27·6	16·6	131·9	1·8
1901	329,086	8,889	2,786	5,249	1,159	558	1,379§	1,039	27·0	15·9	130·4	1·6
1902	334,632	9,368	2,827	5,905	1,225	965	1,351	1,173	27·4	17·3	130·7	2·7
1903	338,895	9,239	2,738	4,822	1,075	467	1,189	1,094	27·2	14·2	116·3	1·1
1904	343,204	9,145	2,894	5,347	1,222	545	1,386	1,162	26·6	15·5	133·7	1·6
1905	358,515	9,649	2,870	5,286	1,182	623	1,336	1,197	26·9	14·7	122·4	1·6
1906	363,223	9,372	2,793	5,299	1,196	495	1,414	1,188	25·8	14·5	127·6	1·6
1907	**367,979**	**8,915**	**2,793**	**4,897**	**900**	**327**	**1,500**	**1,211**	**24·2**	**13·3**	**100·9**	**0·8**

* Previous to 1899 this includes the Registration Sub-Districts of St. Mary Redcliff, Castle Precincts, St. Paul, St. James, and St. Augustine only.

† The Marriages for 1899 were for the first time given for an area co-extensive with the whole enlarged City.

§ Over 65, according to the new age grouping in the L.G B Tables.

TABLE C. Showing Number of Deaths from Zymotic Diseases in Bristol, during the 25 years, 1883-1907.

Enlarged City.

	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907
Small Pox ...	...	...	...	10	8	13	25	...	...	1†	...	2‡	16§	...	5	1	...	..	...	...	1	3	1‖	...	...	1
Diphtheria ...	8	13	19	25	28	23	26	15	16	16	38	53	50	34	38	36	44	33	103	124	189	119	105	59	82	65
Erysipelas ...	14	10	11	10	11	10	21	16	9	12	21	11	8	16	10	5	6	13	12	21	12	8	9	8	7	3
Scarlet F. ...	75	33	37	21	89	217	45	26	40	37	47	35	16	16	59	18	14	13	39	36	66	49	36	39	27	26
Typhus ...	10	1	2	...	...	...	...	...	1	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric F. ...	38	29	40	16	29	23	28	38	33	23	18	26	21	22	20	47	26	35	44	40	59	21	26	13	21	15
Puerperal F.*	...	..	18	12	8	9	17	11	12	7	25	16	11	8	8	6	11	22	20	17	17	14	16	6	14	11
Measles ...	54	33	46	159	101	147	61	185	92	239	105	25	116	8	143	57	309	38	200	7	411	11	94	180	140	36
Wh. Cough...	196	38	99	149	101	124	38	105	201	53	154	80	177	45	64	118	110	118	54	189	105	65	110	123	102	26
Diarrhœa ...	104	83	132	89	119	117	68	131	96	58	99	125	65	143	106	153	348	345	165	134	110	107	206	169	213	133

* Previous to 1884, Puerperal Fever was not separated in the Local returns from Puerperal Diseases generally.

† This death occurred in the Novers Hill Hospital outside the City, and so did not appear in the General Returns.

‡ Of these deaths one occurred in the Novers Hill Hospital, outside the City, and so did not appear in the General Returns.

§ Of these deaths five occurred in the Novers Hill Hospital, outside the City, and so did not appear in the General Returns.

‖ This death occurred on the Hospital Ship, Avonmouth. Patient was admitted from Keynsham Workhouse, outside the City.

CITY OF BRISTOL.

Infectious Disease (Notification Act), 1889.

Notifications received during each Quarter of 1907.

1907.—Table *a*.

NOTIFIABLE DISEASE.	First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.	Total of each diseases.
Small Pox	5	...	...	1	**6**
Cholera. Choleraic Diarrhœa ...	...	...	...	...	...
Diphtheria	259	194	183	279	**915**
Membranous Croup ...	6	2	1	2	**11**
Erysipelas	74	53	56	61	**244**
Scarlet Fever or Scarlatina	268	240	155	223	**886**
Typhus Fever ...	...	...	...	...	...
Enteric or Typhoid Fever	26	7	17	24	**74**
Relapsing Fever ...	...	...	...	...	...
Continued Fever ...	...	...	...	...	...
Puerperal Fever ...	12	12	11	1	**36**
*Cerebro Spinal Meningitis ...	...	...	1	...	**1**
Totals in each Quarter	**650**	**508**	**424**	**591**	**2,173**

*Notification in force from 25th March to 25th September, 1908.

CITY OF BRISTOL.

TABLE *b*. Notification and Deaths registered by Sub-Districts during the year 1907.

	Small Pox.		Choleraic Diarrhœa.		Diphtheria.		Membranous Croup.		Erysipelas.		Scarlet Fever		TYPHUS.		ENTERIC TYPHOID		Relapsing.	Continued		PUERPERAL.		Total cases in each Sub-District.
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths		Cases	Deaths	Cases	Deaths	
Ashley					82	**10**	1	**1**	33	**1**	132	**2**			6	**2**				2		256
Bedminster					251	**19**			36		122	**2**			11	**2**				9	**2**	429
Bristol Central					81	**9**			32	**3**	112	**6**			14	**6**				2		242
Clifton					71	**1**			21	**1**	97	**3**			3					2		194
Knowle					29	**1**	1		6		42	**3**			1					3		82
St George					126	**7**	7		52	**2**	175	**2**			13	**3**				12	**5**	385
St. Philip	5	1			118	**11**	1	**1**	43	**1**	99	**6**			6					4	**2**	276
Stapleton					102	**4**			5		61	**2**			2	**1**				1	**1**	171
Westbury-on-Trym ..					21	**1**			5	**1**	33				3							62
Public Insts.					28				11	**1**	11				3					1	**1**	54
Admitted to Public Insts from outside of Borough	1				6	**2**	1	**1**			2				12	**1**						22
Total cases of each disease	6				915		11		244		886				74					36		2,173
Total deaths from each disease		**1**				**65**		**3**		**10**		**26**				**15**					**11**	**131**
Percentage of deaths to known cases ...	16·6				7·1		27·2		4·0		2·9				20·2					30·5		6·0

CITY OF BRISTOL.

NOTIFICATION—1907.

TABLE *c*. Showing the number of cases of Infectious Disease notified under the Infectious Disease Notification Act, 1889, since its adoption in 1890.

									Enlarged City.									
	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907
Small Pox	0	16	0	165	201	4	42	10	2	0	0	1	6	46	34	13	32	6
Diphtheria and Membranous Croup	56	70	106	141	128	165	258	205	217	215	506	908	1,109	1,134	1,051	1,021	839	926
Erysipelas	105	135	196	230	154	195	246	203	263	337	342	392	376	244	256	303	239	244
Scarlet Fever ...	559	888	1,442	1,245	485	562	1,352	511	382	697	1,957	2,206	2,724	2,168	1,258	1,085	1,019	886
Typhus	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Enteric Fever ...	122	117	135	122	90	89	110	350	113	219	285	281	319	134	172	76	120	74
Continued or Doubtful Fever ...	6	8	3	6	1	1	2	0	0	2	2	2	1	0	0	0	0	0
Puerperal Fever ...	11	11	34	30	18	16	21	10	18	36	46	43	39	31	27	30	37	36

COMPARATIVE TABLE—Showing the Estimated Population, Birth-rate, Death-rate, Zymotic-rate, Fever Death Rate, Diarrhœa Death Rate, and Infantile Death Rate of the 15 LARGEST TOWNS OF ENGLAND (those having a population of over 200,000); also of EDINBURGH, GLASGOW, DUBLIN and CARDIFF, for the Year 1907, compared with the same particulars and rates for the group of 76 large towns.

From the Registrar General's Return.

	Estimated Population, middle of 1907.*	Birth-rate.	Death-rate.	Zymotic rate.	Fever Death-rate.	Diarrhœa Death-rate.	Deaths under 1 year to 1000 Births.
76 Large Towns ...	16,024,458	27·0	15·4	1·54	0·07	0·40	127
London	4,758,218	25·5	14·6	1·42	0·04	0·32	116
Liverpool	746,144	31·8	19·0	2·01	0·13	0·73	144
Manchester	643,148	28·7	18·1	1·72	0·05	0·50	146
Birmingham	553,155	28·3	16·2	1·78	0·09	0·43	147
Leeds	470,268	24·9	15·3	1·26	0·06	0·38	130
Sheffield	455,553	30·9	17·1	2·64	0·09	0·99	145
Bristol	**367,979**	**24·3**	**13·2**	**0·79**	**0·04**	**0·32**	**100**
West Ham	308,284	28·6	14·6	2·18	0·05	0·66	131
Bradford	290,323	20·0	14·8	0·89	0·08	0·17	124
Newcastle-on-Tyne	272,969	29·7	15·9	1·37	0·04	0·14	123
Hull	266,762	28·8	16·1	1·77	0·06	0·37	127
Nottingham	257,489	26·8	17·5	2·25	0·15	0·63	165
Salford	236,670	29·2	17·7	2·14	0·08	0·44	140
Leicester	236,124	23·2	12·7	0·90	0·02	0·31	131
Portsmouth	208,291	27·9	16·0	1·82	0·14	0·29	123
Edinburgh	†345,747	21·7	16·2	1·22	0·03	0·32	127
Glasgow	†847,584	28·3	18·5	2·39	0·12	0·55	130
Dublin	390,691	28·1	23·2	1·77	0·13	0·52	156
Cardiff	187,620	26·0	15·0	1·90	0·07	0·34	131

* These Populations are based on the 1901 Census returns. † The Figures for Edinburgh and Glasgow are for the calendar year.

TABLE I.

Vital Statistics of Whole District during 1907 and Previous Years.

CITY OF BRISTOL.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.		TOTAL DEATHS REGISTERED IN THE DISTRICT.				TOTAL DEATHS IN PUBLIC INSTITUTIONS IN THE DISTRICT.	Deaths of Non-residents registered in Public Institutions in the District.	Deaths of Residents registered in Public Institutions beyond the District.	NETT DEATHS AT ALL AGES BELONGING TO THE DISTRICT.	
				Under 1 Year of Age.		At all Ages.						
		Number.	Rate per 1000 population.	Number.	Rate per 1000 Births registered.	Number	Rate per 1000 population.				Number.	Rate per 1000 population.
1	2	3	4	5	6	7	8	9	10	11	12	13
1897	232,242	6,514	28 0	949	145·6	3,988	17·1	821	122			
EXTENSION OF CITY BOUNDARIES.												
1898	316,900	9,061	28·5	1,491	164·5	5,441	17·1	881	70		5,371	16·9
1899	320,911	9,336	29·0	1,467	157·1	5,844	18·2	1,048	89		5,755	17·9
1900	324,973	8,972	27·6	1,185	131·9	5,397	16·6	971	79		5,318	16·3
1901	329,086	8,889	27·0	1,159	130·4	5,249	15·9	1,039	79		5,170	15·7
1902	334,632	9,368	27·4	1,225	130·7	5,905	17·3	1,173	115		5,790	16·9
1903	338,895	9,239	27·2	1,075	116·3	4,822	14·2	1,094	118		4,704	13·8
1904	343,204	9,135	26·6	1,222	133·7	5,347	15·5	1,162	109		5,238	15·2
1905	358,515	9,649	26·9	1,182	122·4	5.286	14·7	1,197	97	4	5,193	14·4
1906	363,223	9,372	25·8	1,196	127·6	5,299	14·5	1,188	101	2	5,200	14·3
Averages for years 1897-1906 ...	326,258	8,953	27·4	1,215	135·6	5,257	16·1	1,057	97	*		
1907	367,979	8,915	24·2	900	100·9	4,897	13·3	1,211	113	1	4,785	13 0

*The information required is not available.

NOTE.—The deaths to be included in Column 7 of this table are the whole of those registered during the year as having actually occurred within the district or division. The deaths to be included in Column 12 are the number in Column 7, corrected by the subtraction of the number in Column 10 and the addition of the number in Column 11.

By the term "Non-residents" is meant persons brought into the district on account of sickness or infirmity, and dying in public institutions there; and by the term "Residents" is meant persons who have been taken out of the district on account of sickness or infirmity, and have died in public institutions elsewhere.

The "Public Institutions" to be taken into account for the purposes of these Tables are those into which persons are habitually received on account of sickness or infirmity, such as hospitals, workhouses and lunatic asylums. A list of the Institutions in respect of the deaths in which corrections have been made should be given on the back of this Table.

Area of District in acres (exclusive of area covered by water) } 11,705

Total population at all ages	328,945		At Census of 1901.
Number of inhabited houses	58,235		
Average number of persons per house ..	5·6		

I. Institutions within the District receiving sick and infirm persons from outside the District.	II. Institutions within the District receiving sick and infirm persons from the District.	III. Other Institutions, the deaths in which have been distributed among the several localities in the District.
Royal Infirmary.	Royal Infirmary.	City Hospitals:—
General Hospital.	General Hospital.	Novers Hill,
Children's Hospital.	Children's Hospital.	Ham Green,
		Clift House (closed July, 1906).
Cossham Hospital.	Cossham Hospital.	
Convalescent Home.	Convalescent Home.	
Orthopædic Hospital.	Orthopædic Hospital.	

Municipal Institutions (within the City)—

Eastville Workhouse.

Southmead Workhouse.

Stapleton Workhouse.

Lunatic Asylum.

Table II

Vital Statistics of Separate Localities (Registration Sub-Districts) in 1907 and previous years.

CITY OF BRISTOL.

NAMES OF LOCALITIES.	1.—ASHLEY.				2.—BEDMINSTER.				3.—BRISTOL CENTRAL.				4.—CLIFTON.				5.—KNOWLE.				6.—ST. GEORGE.				7.—ST. PHILIP.				8.—STAPLETON.				9.—WESTBURY-ON-TRYM.			
YEAR.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.	Population estimated to middle of each Year.	Births registered.	Deaths at all Ages.	Deaths under 1 year.
	a.	*b.*	*c.*	*d.*	*a.*	*b.*	*c.*	*d.*	*a.*	*b.*	*c.*	*d.*	*a.*	*b.*	*c.*	*d.*	*a.*	*b.*	*c.*	*d.*	*a.*	*b.*	*c.*	*d*	*a.*	*b.*	*c.*	*d.*	*a.*	*b.*	*c.*	*d.*	*a.*	*b.*	*c.*	*d.*
*1897 ...																																				
*1898 ...																																				
1899 ...	38,921	880	496	108	53,814	2,010	1,014	344	54,247	1,282	993	227	46,869	770	658	97	8,346	339	141	42	48,155	1,783	819	278	52,909	1,656	841	271	17,650	530	251	63				
1900 ...	40,107	843	510	109	54,828	1,938	909	236	54,108	1,158	826	150	47,301	660	577	74	8,585	352	171	45	48,763	1,764	725	242	53,067	1,603	907	249	18,214	491	238	53				
1901 ...	42,548	877	472	73	55,838	1,984	894	248	53,001	1,082	795	194	46,820	701	552	71	8,671	401	146	37	50,501	1,798	755	248	52,269	1,477	794	208	19,438	569	221	80				
1902 ...	40,881	875	502	100	61,672	2,087	968	237	44,744	1,131	829	176	44,260	665	591	77	13,709	452	199	56	58,194	1,842	884	253	48,891	1,665	997	258	22,191	607	257	60				
1903 ...	42,039	943	462	92	63,142	2,041	797	229	43,726	1,065	618	139	44,435	660	494	56	14,058	451	153	39	59,738	1,822	747	214	48,986	1,614	711	203	22,771	553	214	64				
1904 ...	42,842	894	411	75	64,505	2,003	850	243	42,793	1,027	706	157	44,446	688	556	68	14,679	522	200	65	61,670	1,779	853	273	48,810	1,545	814	238	23,459	575	260	62				
1905 ...	44,144	921	445	86	65,877	2,072	826	234	41,864	1,042	771	162	41,462	702	558	69	15,302	548	199	50	63,612	1,792	759	216	48,639	1,586	735	226	24,151	556	241	68	10,464	347	135	41
1906 ...	45,023	906	468	72	67,261	1,981	865	256	40,936	1,024	665	178	44,483	696	541	75	15,928	530	210	57	65,567	1,703	706	196	48,472	1,551	803	238	24,847	555	222	57	10,706	334	141	34
Averages of Years 1897 to 1906.																																				
1907 ...	45,909	908	469	68	68,652	1,937	775	195	40,011	920	621	109	44,504	620	507	67	16,558	512	214	44	67,533	1,551	623	144	48,310	1,494	648	156	25,547	569	251	56	10,950	300	99	22

*The Registration Sub-Districts were so interchanged and altered at the Extension of the City in 1897, by the consequent re-arrangement of Boundaries in 1898, that this Table cannot be given for previous years.

Table III

CITY OF BRISTOL.

Cases of Infectious Disease notified during the Year ending 28th December, 1907.

Notifiable Diseases.	Cases notified in Whole District.							Total Cases notified in each Locality.											From each Locality. No. of Cases removed to Hospital										
	At all Ages	At Ages—Years. Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 65.	65 and upwards	Ashley	Bedminster	Bristol Central	Clifton	Knowle	S. George	S. Philip	Stapleton	Westbury-on-Trym	Public Institutions	Not belonging to Borough	Ashley	Bedminster	Bristol Central	Clifton	Knowle	S. George	S. Philip	Stapleton	Westbury-on-Trym	Public Institutions	Not belonging to Borough
Small-pox ..	6	...	..	1	1	4	...	...	...	...	...	...	...	5	...	...	...	1	...	...	...		...	...	5	.	..	...	1
Cholera	...	...	...	...	...	...	..	...	...	...	..	...	...	...	...	...	...	..	...	...	...		...				...	...	...
Diphtheria ..	915	9	239	543	81	43	...	82	251	81	71	29	126	118	102	21	28	6	39	156	42	36	14	67	66	71	6	3	8
Membranous croup ..	11	..	6	4	...	1	...	1	...	...	...	1	7	1	...	...	...	1	...	...	...	...	...	...	...	.	...	.	...
Erysipelas . ..	244	9	6	21	32	139	37	33	36	32	21	6	52	43	5	5	11	...	...	1	4	3	1	1	3	...	...	.	...
Scarlet fever	896	11	256	543	55	21	...	132	122	112	97	42	175	99	61	33	11	2	71	69	94	52	20	93	86	30	23	10	2
Typhus fever	...	...	...	...	...	...	...	...	...	...	...	...	...		...	...	...		...	...	...	...		...	..	...	...	...	...
Enteric fever ...	74	...	...	17	21	36	...	6	11	14	3	1	13	6	2	3	3	12	5	8	12	2	1	9	4	1	4	1	12
Relapsing fever .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	..	...	...	.	...
Continued fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...
Puerperal fever ...	36	...	...	...	8	28	...	2	9	2	2	3	12	4	1	...	1	...	...	5	2	1	1	2	2	...	...	..	...
Plague ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
*Cerebro Spinal Meningitis ...	1	...			1	...	...	...	...	1	...	...	...	..	..	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Totals ...	2173	29	507	1129	199	272	37	256	429	242	194	82	385	276	171	62	51	22	115	239	155	94	37	172	166	102	33	14	23
Phthisis .	542	1	4	40	144	347	6	68	127	78	40	30	55	90	15	9	28	2											

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* This disease was added to the Notification List for the six months March 25th to September 25th.

CITY OF BRISTOL.

Causes of, and Ages at, Death during Year ending December 28th, 1907.

Cause of Death.	Deaths in whole District at subjoined Ages.							Deaths in Localities at all Ages).											Deaths in Public Institutions.
	All ages.	Under 1.	1 and under 5.	5 and under 15.	15 and under 25	25 and under 65	65 and upwards	Ashley	Bedminster	Bristol Central	Clifton	Knowle	S. George	S. Philip	Stapleton	Westbury-on-Tryn	Municipal Institutions	Not belonging to Borough	
SMALL-POX	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	1
Chicken Pox	...	...	.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
MEASLES	36	6	28	1	...	1	...	4	8	3	1	1	2	14	3	...	...	...	1
SCARLET FEVER	26	2	13	9	1	1	...	2	2	6	3	3	2	6	2	...	...	...	20
WHOOPING-COUGH ...	35	16	17	2	...	...	...	5	13	1	...	1	5	6	1	...	3	...	3
DIPHTHERIA	65	1	30	33	...	1	...	10	19	9	1	1	7	11	4	1	...	2	45
MEMBRANOUS CROUP...	3	...	1	2	...	...	...	1	...	...	...	...	...	1	...	...	...	1	...
Croup	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Typhus	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...
FEVER Enteric	15	...	...	...	7	8	...	2	2	6	...	...	3	..	1	...	...	1	10
Other continued ...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...
Cerebro Spinal Meningitis ...	1	...	...	...	1	...	...	...	...	1	...	..	...	...	...	...	..	...	1
Influenza	55	3	...	1	1	29	21	2	11	7	8	4	6	6	3	1	7	...	8
Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
DIARRHŒA	133	104	21	...	...	1	7	4	31	14	3	5	26	38	9	1	1	1	16
Enteritis	19	15	...	...	...	3	1	1	6	1	4	...	1	2	...	...	3	1	6
Puerperal fever	11	...	...	...	2	9	...	...	2	...	...	...	5	2	1	...	1	...	3
Erysipelas	10	2	...	...	1	4	3	1	...	3	1	...	2	1	...	1	1	...	1
Other septic diseases	11	3	...	4	1	3	...	1	3	2	...	...	2	2	...	1	...	...	9
Phthisis	384	5	3	13	84	275	4	31	55	53	23	18	49	51	17	5	81	1	94
Other Tubercular diseases ...	114	29	23	20	18	23	1	20	16	9	6	7	15	16	10	2	8	5	43
Anthrax	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cancer, malignant disease ...	317	1	2	3	3	195	113	41	48	34	53	14	31	27	13	9	30	17	85
Bronchitis	455	60	16	1	...	120	258	39	63	83	45	8	72	82	19	7	35	2	41
Pneumonia	329	75	79	14	11	101	49	30	53	34	36	18	62	46	23	6	16	5	60
Pleurisy	13	...	...	1	2	3	7	3	...	3	...	...	2	1	...	1	3	...	4
Other diseases of Respiratory Organs	74	13	3	1	1	41	15	8	7	10	5	1	5	6	5	3	23	1	29
Alcoholism Cirrhosis of liver }	45	...	...	...	...	38	7	3	6	13	3	2	8	5	1	...	4	...	11
Venereal diseases	11	5	...	...	1	5	...	...	1	...	...	...	3	2	1	...	3	1	5
Premature birth	201	201	...	...	...	...	...	19	32	25	18	12	26	37	15	9	7	1	9
Diseases and accidents of parturition	22	6	...	...	2	14	...	1	7	1	2	1	4	4	2	...	...	...	2
Ac. Rheumatism, Rh. Fever ..	39	...	1	11	5	11	11	5	7	7	5	2	1	7	1	...	3	1	6
Heart diseases	545	13	6	20	26	268	212	62	86	72	70	30	57	59	32	12	60	5	94
Diseases of Blood Vessels ..	267	1	1	..	3	96	166	28	43	35	40	12	25	37	10	7	29	1	49
Diseases of Nervous System ..	395	105	36	14	16	128	96	38	69	26	40	14	55	34	18	5	86	10	121
Diseases of Urinary System ...	187	1	3	3	8	99	73	25	21	26	22	7	13	25	4	5	33	6	68
Other Diseases of the Digestive System	183	35	5	16	12	76	39	21	27	18	20	8	25	27	9	3	7	18	88
Accidents—Negligence	146	7	21	28	10	55	25	4	24	24	11	10	15	18	8	4	14	14	77
Suffocation—Overlying	9	8	1	...	...	...	...	1	2	2	1	...	2	1	...	...	...	...	...
Homicide	1	...	...	. .	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...
Suicide	39	...	...	...	3	30	6	1	8	5	2	3	1	7	4	1	4	3	18
All other causes	700	183	17	9	7	98	386	56	103	88	83	32	91	66	35	15	115	16	183
All causes	4897	900	327	206	226	1738	1500	469	775	621	507	214	623	648	251	99	577	113	1211
District Death Rates								10·21	11·28	15·52	11·39	12·92	9·22	13·41	9·82	9·04	...	...	...
District Birth Rates								19·78	28·21	22·99	13·93	30·92	22·96	30·92	22·27	27·39	...	...	...
Deaths of Infants under 1								68	195	109	67	44	144	156	56	22	29	10	...
Number of Births								M444 F.464 908	974 963 1937	471 449 920	315 305 620	272 240 512	785 766 1551	733 761 1494	293 276 569	149 151 300	62 42 104	...	...
Infantile Rate ...								74·87	100·66	118·47	108·06	85·93	92·84	104·41	98·41	73·33	...	...	...

CITY RATES.

No. of Births.	Birth Rate.	DEATH RATE.			Principal Epidemic Diseases (Zymotic) Rate.	Infantile Rate.
		This Year.	Last Year.	10 Years' Average		
Males. 4498 | Females. 4417 8915	24·22	13·30	14·58	16·11	0·85	100·95

Average age at Death of persons aged 65 and upwards, 75 years and 2 months.

Births of Illegitimate Children (Males 159, *Females* 132*)*—291

Deaths „ „ 70

Inquests 446

Uncertified Deaths 11

TABLE V. INFANTILE MORTALITY during the Year ending 28th January, 1907.

Deaths from Stated Causes in Weeks and Months under One Year of Age.

CAUSE OF DEATH.	Under 1 Week.	1-2 Weeks.	2-3 Weeks.	3-4 Weeks.	Total under 1 Month.	1-2 Months.	2-3 Months.	3-4 Months.	4-5 Months.	5-6 Months.	6-7 Months.	7-8 Months.	8-9 Months.	9-10 Months.	10-11 Months.	11-12 Months.	Total Deaths under 1 Year.
All Causes :—																	
Certified	226	50	33	30	339	96	72	51	57	35	44	57	35	35	41	28	890
Uncertified	10	..	..	..	10	..	..	..	..	..	..	..	..	..	..	..	10
Common Infectious Diseases :—																	
Small-pox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chicken-pox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Measles	..	..	..	..	..	..	..	..	..	..	1	3	..	..	1	1	6
Scarlet Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	2
Diphtheria : Memb. Croup	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Whooping Cough	..	..	..	..	..	1	1	..	1	..	..	3	4	2	3	1	16
Diarrhœal Diseases :—																	
Diarrhœa, all forms	..	1	4	3	8	10	13	14	13	10	7	7	4	7	9	2	104
Enteritis (not Tuberculous)	..	..	..	..	..	4	3	..	2	..	1	3	2	1	1	1	18
Gastritis, Gastro-intestinal Catarrh	..	..	..	..	..	1	..	3	2	1	..	..	1	1	..	..	9
Wasting Diseases :—																	
Premature Birth	145	13	11	9	178	16	4	1	..	..	..	..	..	..	..	..	199
Congenital Defects	5	3	3	..	11	1	..	1	..	..	..	..	..	..	..	..	13
Injury at Birth	2	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	2
Want of Breast-milk	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Atrophy, Debility, Marasmus	3	9	2	2	16	17	18	4	10	3	3	3	2	..	2	4	82
Tuberculous Diseases :—																	
Tuberculous Meningitis	..	..	..	..	..	..	1	..	..	..	2	..	1	2	..	2	8
Tuberculous Peritonitis : Tabes Mesenterica	..	..	..	..	..	1	1	1	2	1	2	1	1	1	..	..	11
Other Tuberculous Diseases	..	..	..	..	..	1	1	2	..	2	2	5	1	1	..	1	16
Erysipelas	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	2
Syphilis	..	..	..	1	1	2	1	1	..	..	..	..	..	..	..	..	5
Rickets	..	..	..	..	..	..	..	..	..	..	..	1	2	..	1	..	4
Meningitis (not Tuberculous)	..	..	..	..	..	..	..	..	..	1	3	2	2	1	1	..	10
Convulsions	16	6	6	2	30	9	13	7	5	10	2	5	2	..	4	2	89
Bronchitis	..	1	4	4	9	11	5	5	2	1	8	4	2	7	3	2	59
Laryngitis	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	1
Pneumonia	1	..	1	..	2	3	2	4	8	3	8	15	7	8	9	6	75
Croup—Spasmodic	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1
Suffocation, overlying	3	..	..	..	3	1	..	..	2	..	1	..	..	..	..	..	7
Other Causes	61	17	1	9	88	18	9	8	8	3	4	4	4	3	6	5	160
	236	50	33	30	349	96	72	51	57	35	44	57	35	35	41	28	900

PART II.

GENERAL WATER SUPPLY.

The water supply is in the hands of a Company incorporated by Act of Parliament, and is obtained by gravitation from springs in the triassic conglomerates and carboniferous limestone on the sides of the Mendips, about 16 miles from the City; and by pumping from the Yeo Reservoir, and Rickford and Langford Springs, about 12 miles from the City. From the Yeo Reservoir and the Springs the water is lifted 250 feet into the aqueduct which carries the gravitation supply to the Store Reservoirs at Barrow Gurney.

All water supplied from the Store Reservoirs is filtered before delivery.

A supplementary supply is obtained from the deep wells at Chelvey, eight miles from Bristol, sunk in the new red sandstone (triassic).

The water service throughout the Company's District is constant, and the average daily consumption is about 23 gallons per head of the population supplied.

The Company has power to make an annual charge for each closet flush, in addition to the charges for other domestic purposes (not now enforced in the case of a second W.C. cistern in houses of the gross value of £30 and under), hence very many out-door closets throughout the City are dependent upon hand flushing. After 25th March, 1896, the charge for flushing cisterns in dwelling houses of the gross value of £20 and under, was reduced to one shilling per quarter.

The City Analyst furnishes the following Report.

Analysis of Water.

Twenty-two samples were examined—three samples representing the City water supply.

Nineteen samples were received from the Medical Officer of these one was a sewage effluent, eleven were grossly polluted by sewage, two showed evidence of pollution by sewage or trade waste, one showed evidence of gradual pollution, one showed evidence of pollution by surface drainage, and three showed evidence of past contamination.

Report on Sample of Water taken from tap in City Laboratories—25th October, 1907.

NUMBER 19.

REMARKS.—Clear, bright, neutral to litmus.

ANALYTICAL DATA.

	Parts per 100,000.	Grns. per gall
Total solids	35·0	24·5
Mineral matter	25·5	17·8
Organic matter	9·5	6·7
Chlorine as Chlorides	1·6	1·1
Hardness	....	12·2 degrees
Free Ammonia	traces	
Albuminoid Ammonia	·007	·0049
Total Oxidized Nitrogen ..	·24	·17
Nitrites	Nil	
Permanent Hardness	....	3·9 degrees
Oxygen Absorbed	·0428	·0299
Nutrient Gelatine at 22° C. ..	24 colonies per CC	
Nutrient Agar at 37° C. ..	8 colonies per CC	
MacConkey's Bile Salt Broth	No acidity or gas B. coli absent	

Report on Sample of Water taken from the City Water Supply, Barrow Gurney—13th November, 1907

UNFILTERED. NUMBER 20.

REMARKS.—Faint turbidity, yellowish tint, neutral to litmus.

SOLIDS : slight charring, no smell.

ANALYTICAL DATA.

	Parts per 100,000.	Grns. per gall
Total solids	26·8	18·76
Mineral matter	19·2	13·44
Organic matter	7·6	5·32
Chlorine as Chlorides	1·6	1·1
Hardness	....	10·1 degrees
Free Ammonia	·001	·0007
Albuminoid Ammonia	·03	·021
Total Oxidized Nitrogen ..	·048	·034
Permanent Hardness	....	3·7 degrees
Oxygen Absorbed	·116	·081
Nutrient Gelatine at 22° C. ..	240 colonies per CC	
Nutrient Agar at 37° C. ..	10 colonies per CC	
MacConkey's Bile Salt Broth	No acidity or gas B. coli absent	

Report on Sample of Water taken from the City Water Supply, Barrow Gurney—13th November, 1907.

FILTERED. NUMBER 21.

REMARKS—Clear, bright, neutral to litmus.

Solids : slight charring, no smell.

ANALYTICAL DATA.

	Parts per 100,000.	Grns. per gall
Total Solids	24·75	17·32
Mineral matter	21·35	14·94
Organic matter	3·4	2·38
Chlorine as Chlorides	1·6	1·1
Hardness	....	10·1 degrees
Free Ammonia	traces	
Albuminoid Ammonia	·008	·0056
Total Oxidized Nitrogen ..	·048	·034
Permanent Hardness	....	3·7 degrees
Oxygen absorbed	·052	·056
Lime CaO	9·9	6·9
Magnesia MgO	2·1	1·4
Sulphuric Acid SO	3·3	2·3
Nutrient Gelatine at 22° C. ..	36 colonies per CC	
Nutrient Agar at 37° C. ..	6 colonies per CC	
MacConkey's Bile Salt Broth	No acidity or gas B. coli absent	

OPINION on samples of Water Nos. 19, 20, 21.

The chemical and bacteriological figures show that the water is free from sewage contamination, the water derived from the deep well is within the limits of chemical and bacterial purity in every respect ; that from the reservoirs is however too rich in organic matter, as evidenced by the high figure obtained for Albuminoid Ammonia both before and after filtration.

It is interesting to note that Dr. Houston in his recent report on the London Water Supply noticed in certain cases a similar excess in this figure.

The Albuminoid Ammonia in the filtered water would thus at any rate appear to be partly due to the season, but chiefly due to the very high figure in the unfiltered water, which filtration does not completely rectify.

Sewerage, Drainage, Scavenging, etc.

All these matters are reported upon annually by the City Engineer to the Sanitary Committee, and the Report is published.

Parks and Open Spaces.

The Parks and Open Spaces available for the recreation of the people comprise in all 729½ acres, including Clifton and Durdham Down, which have a combined area of 442 acres.

Of the 729½ acres, 287½ are laid out as parks, gardens, or playgrounds ; but the public has the right to wander over about 540 acres. Wicket pitches are allowed on Durdham Down and in four of the parks. The net annual cost of the Parks and Open Spaces is about £5,000.

Medical Inspection in Public Elementary Schools.

The number of children attending the Board Schools in September 1897, before the extension of the City, was 18,077, and attending other schools was 21,868 ; or a total of 39,945. In 1898 the City was enlarged, a further enlargement took place in 1904, and by the end of 1907 the total number of scholars attending the schools controlled by the Education Committee had risen to 64,695.

	No.	Accommodating.
Council Schools	44	39,867
Church of England Schools	42	22,045
Wesleyan School	1	743
Friends' School	1	500
Roman Catholic Schools	5	1,540
Totals	93	64,695

The Education (Administrative Provisions) Act, 1907 which came into force on January 1st 1908, renders it incumbent upon the Education Committee to provide for the Medical Inspection of School Children. The Committee had the matter under consideration at the end of the year.

I am informed that there were no children under 3 years of age attending the Public Elementary Schools in October, 1907, and that in certain schools the Education Committee have decided to exclude children under 5.

In some of the poorer districts, however, children under 5 will be admitted, but none under 3 years of age.

The number of children under 8 years of age on the Registers of the Public Elementary Schools in October, 1907, was 24,452, and of that number, 4,984, were under 5 years of age.

The following table shows the number of cases of non-notifiable diseases forwarded to the Medical Officer of Health, in the absence of a School Medical Officer of the Education Committee.

1907.

	1st Quarter ending 30th March.	2nd Quarter ending 29th June.	3rd Quarter ending 28th September.	4th Quarter ending 28th December.	Total
Measles	277	341	35	107	760
Chicken-pox ..	22	52	18	104	196
Whooping Cough	13	4	30	39	86
Mumps	16	23	5	18	62
Suspicious Throats & Rashes	1	10	1	8	20
	329	430	89	276	1124

Precautionary Handbills are left at the houses, but NO medical supervision has hitherto been exercised over these cases, such as will become possible when the School Medical Inspection Staff is appointed.

No returns of any of these diseases have been received from the following Schools during the year 1907.

Avonmouth (V).
Bedminster (V). East Street.
Berkeley Place (V). Jacob's Wells.
Christ Church (V). Victoria Street.
Cutlers' Hall (V). Rosemary Street.
Downend Road (C). (temp).
Dr. Bell's (V). Fishponds Road.
Easton (C).
Emmanuel (V). Louisa Street.
Fishponds College Practising School (Girls). Oldbury Court Road.
Greenbank (C).
Holy Cross R.C. (V). Victoria Street, Temple.
Holy Trinity (V). Hotwells.
Hotwells (C). Hope Chapel Hill.
Hotwells National, Hotwells.
Marlborough Hill (V).
Orchard Place, Stillhouse Lane.
Park Place R.C. (V).
Parson Street (C).
Portland (C). Henrietta Street, Kingsdown.
Redcross Street (C).
Rose Green (C).
St. Augustine's (V). Wells Street.
St. George (C).
St. George (V).
St. Luke's (V) Weare Street.
St. Luke's (V). Barton Hill.
St. Mary on Quay R.C. (V).
St. Mary's Redcliff, Infants' (V). Barnard's Place.
St. Mary's Redcliff, Boys' (V). Redcliff Parade.
St. Mary's Redcliff, Girls' and Infants (V). Ship Lane.
St. Matthias (V). Broad Weir.
St. Michael's (V). Old Park.
St. Nicholas with St. Leonard's (V). Queen Charlotte St.
St. Nicholas, R.C. (V). Pennywell Road.

St. Paul's (V). Dean Lane.
St. Philip's Church (V). Tower Hill.
St. Saviour's (V). Woolcott Park.
Stapleton (V).
Stoke Bishop (V).
Victoria Road. (temp).
Wells Road (C).
Westbury Park (C).
Wick Road (C).

Housing of the Working Classes.

The following Table shows the action taken over a period of 18 years :—

Date.	No. of Houses dealt with.	No. of Houses closed.	No. of Houses made habitable.
1890	35	30	5
1891	72	27	45
1892	26	18	8
1893	2	0	2
1894	34	18	16
1895	31	18	13
1896	28	10	18
1897	4	3	1
1898	9	7	2
1899	33	31	2
1900	21	6	15
1901	6	1	5
1902	64	61	3
1903	67	58	9
1904	34	16	18
1905	28	11	17
1906	9	9	0
1907	18	15	3
Total ..	521	339	182

Municipal Lodging House.

The Corporation has erected, on the recommendation of the Health Committee, a Lodging House for Casuals in Wade Street, to provide 120 beds, at a cost of over £7,000.

This Lodging House was opened on April 20th, 1905.

The total number of nightly occupations from the 25th March, 1907 to the 25th March 1908, was 26,540, or an average of 73 lodgers per night during the whole of the period under notice, the total number of beds available being 120. The house was opened on 20th April, 1905, with 60 beds, and continued with this number until the 17th September, 1905, the average number of lodgers per night during that period was 42. On the 17th September, 1905, the number of beds was increased to 120 and the average nightly occupations from that date to 25th March 1906, was 74.

MORTUARIES.

Quakers' Friars, off Merchant Street, *Post-mortem* Examination Room and Coroner's Court adjoining.

Crew's Hole, St. George, near the Ferry. (Not in use.)

In addition to the above, there are Mortuaries for Police purposes at Bedminster and Redland Police Stations.

A new Mortuary is to be constructed at Avonmouth.

THE MIDWIVES' ACT, 1902.

This Act, which came into force on 1st April, 1903, prescribes *inter alia* :

1. That from and after the 1st April, 1905, it shall be an offence punishable by fine for any woman, who is not certified under the Act, to take or use the name or title of Midwife, or any name or title implying that she is certified under the Act.

2. That from and after the 1st April, 1910, no woman shall habitually and for gain act as a Midwife, otherwise than under the direction of a qualified medical practioner, unless she is certified under this Act, under a fine of £10.

3. *Provision for existing Midwives.* Any woman who, within two years from the date of the Act coming into operation (April, 1903), claims to be certified under the Act, shall be so certified, provided she holds a Certificate in Midwifery from certain approved qualifying Bodies ; *or produces satisfactory evidence that at the passing of this Act she had been for at least one year in boná fide practice as a Midwife*, and bears a good character.

4. The Council of every County Borough is the Local Supervising Authority over Midwives ; and the Central Midwives' Board in London is the Central Supervising Authority, and have laid down Rules and Regulations for the execution of the Act.

The duty of the Local Supervising Authority includes general supervision over every Midwife practising within their area, medical supervision of the appliances, methods and records, inspection of her place of residence, and investigation of her mode of practice, as laid down by the Central Midwives' Board, suspension of Midwives from practice, if found necessary, to prevent the spread of infection, and other general registration and control.

At present, under the Notification Act, cases of Puerperal Fever are directly notified to the Medical Officer of Health, and all measures for preventing the spread of infection are naturally executed by the Health Department. The Regulations of the Central Midwives' Board (E. 5), prescribe that under this Act all disinfection and other precautions are to be done to the satisfaction of the Sanitary Authority ; and the same Board, in its suggestions to County and County Borough Councils, has assumed that the Health Committee would naturally form the nucleus of a Local Supervising Authority with power to add to its number from outside the Council or otherwise.

The Council of the City of Bristol on 10th November, 1902, however, deputed the working of this Act to the Watch Committee. I have no information as to the working of the Act.

Notification of Births Act, 1907.

This Act, which is adoptive, provides for the notification of every birth, within 36 hours, to the Medical Officer of Health.

As a penalty attaches to default, and Medical practitioners become liable, some opposition has been manifested to the adoption of the Act.

The Local Government Board will not approve of the adoption of the Act unless satisfactory means are provided for giving effect to its intention :—viz., the extension of advice and assistance to poor mothers in the proper feeding and care of their infants. This involves the appointment of Female Health Visitors.

Most of the information in regard to those cases where assistance would be useful would come through Midwives rather than Medical Practitioners, and it is obviously important that the control of the Midwives and of the Health Visitors should be vested in the same Committee.

It is not, therefore, at present evident whether this Act, if adopted, will be administered by the Health Committee, or by the Watch Committee who at present control the Registration of Midwives.

AMBULANCE SERVICE AVAILABLE IN THE CITY OF BRISTOL.

Property of	Address.	Telephone No.	Telegrams.	Class of Cases Removed.	Office Hours.	Method of obtaining Ambulance.
Corporation of Bristol	40 Prince Street	789	Hygiene	Fevers	9.30-5 Except { Sat., 9.30-1 / Sun., 12-1	By Notification to the M.O.H.
Bristol City and Marine Ambulance Corps	71 Redcliff Hill	1228 (calls by day and night)	Ambulance, Bristol	All except Infectious Diseases	Day and Night	By communicating with the Hon. Sec., Capt. J. F. Trezise, 71 Redcliff Hill.
Ditto ditto	Seamen's Institute, Prince Street	1694 (calls by day and night)	Ditto	Ditto	Ditto	Ditto, or to Rev. Norman de Jersey, Seamen's Institute, Prince Street.
St. John Ambulance Brigade (City of Bristol Corps)	Unity Street, St. Philip	2400 (Ambulance)	Invalid, Bristol	Ditto	Day and Night	By communicating with the Hon. Sec., J. Maynard Froud, Esq., Transport Station, Unity St., St. Philip.
Bristol Tramway & Carriage Company	Brunswick Square Depôt	333	Cab (Brunswick Square)	Special Cab retained for Infectious Diseases	Ditto	Ring up or Wire.

The St. John Ambulance Brigade deals with the Street Casualties; the Bristol City and Marine Ambulance Corps deals with the Dock work, Bristol South, and Subscribers.

Health Department.

AMBULANCE RECORD.—1907.

Infectious Cases Removed.

Month.	Cases Removed (Total).	Cases Removed (Average Daily).	Journeys.	Mileage (Total).	Mileage (Average Daily).
January ..	106	3·4	71	915	29·5
February ..	107	3·8	66	908	32·4
March ..	103	3·5	74	998	32·1
April ..	79	2·6	60	759	25·3
May	96	3·0	62	813	26·2
June ..	86	2·8	62	726	24·2
July ..	80	2·5	61	734	23·6
August ..	59	1·9	47	605	19·5
September	101	3·3	70	939	31·3
October ..	110	3·5	72	1034	33·3
November	111	3·7	73	951	31·7
December..	95	3·0	67	885	28·5
(Totals)	1133	3·06 (Average Daily).	785	10,267	28·16 (Average Daily).

DISINFECTION STATION AND AMBULANCE SERVICE.

Considerable alterations and additions have been made at the Disinfection Station, which is on the site formerly occupied by the City Smallpox Hospitals in St. Philip's Marsh. The surrounding wall has been raised to a uniform height of 7 feet, and the buildings now comprise :—

(1) Disinfecting Block, containing 2 Steam Disinfecting Machines, Receiving Room, Clearing Room, and a Boiler House.

These rooms have been erected for 3 years, and are sufficient for the purpose, except that the Boiler House would be more convenient if a little larger. No laundry is attached, as this was deleted from the original plans.

The new buildings, completed in 1906, comprise stabling for 8 horses and 2 loose boxes. The stabling is of modern construction, fairly lighted and well ventilated, and has enough accommodation for the ambulance horses and the horses used in the disinfecting carts. Near to the stable is a small forage room, a harness room, which is also to be used as a mess room, and offices.

The old sheds have been enlarged and adapted to serve as coach house and cart shed.

It is contemplated to remove the Ambulance Service from Clift House Stables, where there is cottage accommodation for both the ambulance driver and the stableman, and also, at the adjacent hospital, accommodation for the ambulance nurse.

Upon this transference it will be necessary to complete the work contained in paragraphs 3 and 4 of my general recommendations dated November 14th, 1904, with reference to the City Extensions (1904) :—

> " The work to be carried out at this Central Station is so important that a caretaker, who would be a superintendent disinfector, should reside on the premises. For this purpose a cottage is required, containing a bedroom, sitting room, scullery, and the necessary offices on the ground floor for the caretaker. A small office and Commons room and lavatory should be provided near the entrance for the use of the caretaker ; also accommodation for the ambulance nurse, if the stables are removed to the disinfecting station ; and provision should be made for the workmen for changing their clothes and keeping their clothes and persons free from infection."

I also recommended and still consider it advisable to provide in connection with these :—

> " Four rooms on the first floor for use under the Infectious Disease (Prevention Act)."

These matters are now under consideration of the Health Committee and plans have been prepared.

VACCINATION.

The 1906 returns are the last complete ones available. I am indebted to the Clerk of the Bristol Union for the following information:—

	Bristol Union.
Vaccination.	
Number successfully vaccinated up to 31st January, 1907......	6,068
Insusceptible...........................	19
Died unvaccinated	928
Postponed by Medical Certificate	193
Certificates of Conscientious Objection	354
Removed to Districts, the Vaccination Officer of which has been duly apprised	228
Cases left and not traceable.........	970
In abeyance	717
Births registered in 1906	9,474
[*] Percentage of successful vaccination to births	64·02

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[*] A special return of Certificates of successful primary vaccinations at all ages received in each of the calendar years 1900, 1901, 1902, 1903, 1904, 1905, 1906, and 1907 was furnished at the request of the Local Government Board, and showed as follows:—Certificates received in 1900, 5,917; in 1901, 5,776; in 1902, 6,898; in 1903, 6,972; in 1904, 7,413; in 1905, 7,253; in 1906, 6,870; and in 1907, 6,464.

PAUPERISM.

***Bristol Union.**—Summary of persons relieved on the following dates: the first named date (1st April, 1898) being the date of the formation of the Union for the City and County of Bristol.

	1st April, 1898.	1st April, 1899.	1st April, 1900.	1st April, 1901.	1st April, 1902.	1st April, 1903.	1st April, 1904.	1st April, 1905.	1st April, 1906.	1st April, 1907.	1st April, 1908.
In Workhouses and Children's Homes	2,357	2,281	2,305	2,408	2,355	2,388	2,513	2,578	2,528	2,653	2,745
In Institutions, &c.	114	116	127	127	148	155	149	159	146	148	135
In Lunatic Asylums	826	824	810	830	847	856	859	869	875	881	863
Out-door poor ...	7,796	6,409	5,847	5,837	5,845	5,829	6,030	6,425	6,116	5,921	5,696
	11,093	9,630	9,089	9,202	9,195	9,228	9,551	10,031	9,665	9,603	9,439
Weekly cost of Out-relief	£724 6 1	£683 14 11¾	£644 14 7	£662 18 4¾	£697 16 9½	£710 0 10½	£746 4 3½	£803 19 8	£792 12 2½	£765 14 1½	£756 8 3

* The Union was much increased in area and population in October, 1904.

Medical Officer of Health's Department.

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CLERICAL RETURNS.

Number of letters and documents received at and despatched from the Office.

	1904 Estimated for Special Report.		1905		1906		1907	
	In.	Out.	In.	Out.	In.	Out.	In.	Out.
M.O.H. ..	4,481	5,490	10,603	15,104	9,124	8,727	9,417	8,475
Infectious Disease	20,037	36,605	14,280	19,859	12,488	17,990	14,519	20,874
Hospitals	2,816	3,465	3,025	2,810	3,214	3,055	4,746	3,883
Inspectors	3,485	2,656	6,250	5,959	5,802	4,505	5,943	4,201
Port ..	633	1,058	962	1,003	1,056	957	1,768	1,905
TOTAL ..	31,452	49,274	35,120	44,735	31,684	35,234	36,393	39,338
	80,726		79,855		66,918		75,731	

In 1904–05, a large amount of correspondence and the distribution of many thousand Circulars in connection with the adoption of Notification of Phthisis, caused a considerable increase in the output figures.

1907—1908.

Baths and Wash-houses.

The following figures are returned for the year's work :—

Year ended 25th March, 1908.	No of Bathers. Swimming Baths.	Private Baths.	Women Washing Clothes.
"Victoria," Clifton (Baths only)	15,704	1,976	...
"Royal," Kingsdown (Baths only)	42,543	...	...
Broad Weir	30,884	23 068	15,376
Mayor's Paddock, New Cut	29,369	25,698	14,265
Jacob's Wells (Baths only)	44,298	21,808	...
Rennison's (Swimming Bath only)	8,139	...	...
Barton Hill	56,137	29,725	...
Eastville Park (Swimming Bath only)	9,401	...	...
Victoria Park (Swimming Bath only)	6,181	...	...
Greville Park (Swimming Bath only)	7,326	...	...
Total ...	249,982	102,275	29,641

1906-7	281,800	110,708	31,218
1907-8	249,982	102,275	29,641
	− 31,818	− 8,433	− 1,577

(Up to March 25th, 1908).

Particulars supplied by Mr. J. KANE.

Mr. Edward Russell, B.Sc , F.I.C., City Analyst, has kindly supplied the following returns for 1907.

"FOOD AND DRUGS ACTS."

Summary of Returns for 1907.

Article.	Number Examined	Number Genuine	Number Adulterated.	Per cent. Adulterated.
Milk	637	555	82	12·9
Milk (skim)	13	12	1	7·7
Butter	308	274	34	11·0
Margarine	34	33	1	2·9
Lard	13	13	0	0
Cheese	18	18	0	0
Cream	7	7	0	0
Spirits	58	55	3	5·1
Coffee	26	25	1	3·8
Tea	9	9	0	0
Chocolate and Cocoa	4	4	0	0
Pepper	11	11	0	0
Mustard	3	3	0	0
Wheaten and other Flours (including Bread)	34	34	0	0
Malt Vinegar	11	11	0	0
Sugars	24	24	0	0
Baking Powder	13	13	0	0
Pudding Mixture ...	3	3	0	0
Custard Powder	4	4	0	0
Egg Powder........	3	3	0	0
Meat & other Jellies	5	5	0	0
Sausages	6	6	0	0
Mineral Waters	13	13	0	0
Ice Cream	3	3	0	0
Drugs	40	40	0	0
	1300	1178	122	9·4

The working of these Acts in the City of Bristol is entrusted to an Inspector acting under the Watch Committee, and is not administered by the Health Committee.

METEOROLOGICAL OBSERVATIONS FOR BRISTOL, 1907.

January.—Apart from two or three days of very unsettled weather at the commencement, the first three weeks of this month were, as a rule, unusually fair and mild. Following the 21st, however, a great change took place, a high pressure system of great intensity which advanced to central Europe from the north-eastward, bringing with it frosts of great severity. Following a thaw on the 27th, winter again returned on the closing day.

The mean temperature (max. and min.) was 38·5 degrees, this value being slightly deficient. The maximum reading was 51 degrees on the 1st, and the minimum 19 degrees on the 25th—an extreme range of 32 degrees. The warmest day occurred on the 13th, with a mean temperature of 45 degrees ; and the coldest on the 24th, with a mean of 23 degrees.

The total rainfall at Clifton was 2·11 inches, and at Frampton Cotterell 1·32 inches ; falling upon 16 and 11 days respectively. These amounts show a falling off from the average of about an inch.

Mean atmospheric pressure at 9 a.m. was 30·364 inches, a remarkably high value. The maximum reading was 30·862 inches on the 23rd, and the minimum 29·220 inches on the 2nd.

February.—A thoroughly wintry month, decidedly the coldest of the season. Although so winterly, however, the weather could not be said to be either unpleasant or unfavourable upon the whole ; the rainfall being small, while there were several very beautiful mild and sunny days.

The mean temperature was 37·5 degrees, about 2½ degrees below the normal. The highest reading recorded was 51 degrees on the 28th, and the lowest 21 degrees on the 3rd—an extreme range of 30 degrees. The warmest day was the 17th, with a mean temperature of 46 degrees; and the coldest the 2nd, mean 28 degrees. Fifteen frosty nights were experienced locally.

The rainfall ranged from 1·81 inches at Clifton to 1·57 inches at Frampton Cotterell, falling upon 14 days. These values show a deficiency in the district of nearly three quarters of an inch.

Mean atmospheric pressure at 9 a.m. was 30·052 inches, this value being above the normal. The maximum reading was 30·616 inches on the 2nd, and the minimum 29·062 inches on the 12th.

MARCH.—This month commenced with fine quiet weather, and concluded amidst a wealth of sunshine. Although during both these periods the day temperatures were high, the nights were of an opposite character; the month opening with seven successive frosts, and closing with nine. Rough and most unpleasant weather prevailed throughout the third week.

The mean temperature was 45·5 degrees, over three above the normal. The maximum was 69 degrees on on the 30th and 31st, and the minimum 26 degrees on the 12th—an extreme range of 43 degrees. The warmest day occurred on the 31st, with a mean temperature of 53 degrees; and the coldest on the 5th; mean 35 degrees. Seventeen frosty nights were recorded.

The total rainfall at Clifton was 1·14 inches. and at Frampton Cotterell 0·82 inch; showing a deficiency of about 1¼ inches. The rainy days were 14 and 13 respectively.

Mean atmospheric pressure was much in excess, the value at 9 a.m. being 30·224 inches. The highest reading was 30·580 inches on 23rd, and the lowest 29·670 inches on the 17th.

April.—A most disappointing month, sharp frosts occurring with disquieting frequency; while copious, and it must be admitted, needed rainfalls were accompanied by anything rather than what is known as "growing weather." Unfortunately, at the close conditions generally showed no promise of improvement.

The mean temperature was 47·5 degrees, a value slightly below the average. The maximum was 69 degrees on the 24th, and the minimum 31 degrees on the 18th—an extreme range of 38 degrees. The warmest day was experienced on the 24th, with a mean temperature of 58 degrees, and the coldest on the 3rd, mean 43 degrees. At Frampton Cotterell seven frosty nights were observed.

The rainfall locally varied from 3·95 inches at Clifton to 3·02 inches at Frampton Cotterell, falling upon 19 and 18 days respectively. These totals show an excess of nearly 1¾ inches.

Mean atmospheric pressure was very deficient, the figures being 29·791 inches. The highest reading at 9 a.m. was 30·352 inches on 24th, and the lowest 29·102 inches on the 3rd.

May.—Another most disappointing and unseasonable month, only two days of bright sunshine occurring throughout. As in the preceding year, the thermometer reached its highest point during the earlier half of the month, and its lowest towards the close.

The mean temperature was 53·6 degrees, just about the average. The maximum was 79 degrees on the 12th, and the minimum 38 degrees on the 19th and 22nd—showing a range of 41 degrees. The warmest day was the 12th, with a mean temperature of 63 degrees; and the coldest the 20th, mean 45 degrees.

The rainfall recorded at Clifton was 2·61 inches, and at Frampton Cotterell 2·39 inches; falling upon 20 and 15 days respectively. These quantities show an excess of nearly half-an-inch.

Mean pressure at 9 a.m. was 29·869 inches, a value much below the normal. The maximum reading was 30·278 inches on the 18th, and the minimum 29·397 inches on the 2nd.

JUNE.—Apart from a couple of fairly warm days on the 8th and 9th, this month possessed no redeeming feature whatever; the weather throughout being suggestive of what it is customary to look for in an average October. Some improvement took place towards the close, but the general conditions held out no promise of any summerlike weather.

The mean temperature was 56·3 degrees, this value being deficient by no less than three degrees. The maximum reading was 76 degrees on the 9th, and the minimum 45 degrees on the 3rd, 29th and 30th—showing a range of 31 degrees. The warmest day occurred on the 9th, with a mean temperature of 64·5 degrees; and the coldest on the 2nd, mean 51 degrees.

The rainfall locally varied from 3·23 inches at Clifton to 3·46 inches at Frampton Cotterell, falling upon 22 and 20 days respectively. These values show an excess of about three-quarters of an inch.

Mean atmospheric pressure for the month was decidedly deficient, the value being 29·867 inches. The maximum reading at 9 a.m. was 30·214 inches on the 17th, and the minimum 29·470 inches on the 1st.

JULY.—The unseasonable conditions which had been almost continuous during the preceding three months continued for the first fortnight, then came a burst of brilliant summer weather which did much to brighten prospects generally. Heavy thunderstorms on the 21st and 22nd brought a renewal of unsettled weather, but this time fortunately accompanied by weather which was seasonable ; the temperature keeping well up to the average, and sunshine being fairly abundant.

The mean temperature was 60·3 degrees ; this being about two below the normal. The extremes for the month were 81 degrees on the 20th, and 46 degrees on the 2nd and 3rd—an extreme range of 35 degrees. The warmest day occurred on the 20th, with a mean of 69·5 degrees ; and the coldest on the 2nd, mean 54 degrees.

The total rainfall was 2·72 inches at Clifton, and 3·05 inches at Frampton Cotterell ; falling upon 15 and 13 days respectively. The amount at Clifton shows a deficiency of about a quarter of an inch.

Mean atmospheric pressure for the month was 30·048 inches, this value being slightly above the average. The maximum recorded at 9 a.m. was 30·505 inches on the 11th, and the minimum 29·579 inches on the 4th.

August.—A very cold unsettled month, in strong contrast to its predecessor of the year before. Only on two occasions did the thermometer manage to reach 70 degrees, against four days of 80 degrees and upwards, and 17 with maxima between 70 and 80 degrees in 1906.

The mean temperature was 58 degrees ; this value being deficient by four degrees, and six below that of the month in the previous year. The extremes were 70 degrees on the 17th, and 47 degrees on the 20th—a range of only 23 degrees. The warmest day was the 4th, with a mean of 65 degrees ; and the coldest the 21st, mean 52 degrees.

The total rainfall varied from 2·29 inches at Clifton to 1·80 inches at Frampton Cotterell ; falling upon 16 and 17 days respectively. These values show a deficiency of about an inch and a quarter.

Mean atmospheric pressure was 30·013 inches, a value slightly above the average. The extreme readings at 9 a.m. were 30·387 inches on 21st, and 29·686 inches on the 15th.

SEPTEMBER.—A most remarkable month, brilliant summer weather setting in upon the 6th, and continuing to the commencement of October. Not a drop of rain fell locally during this period, although its absence in the last week was somewhat surprising, conditions by then having become thoroughly unsettled.

Mean temperature was 59 degrees, nearly 2½ above the average. The maximum was 76 degrees on the 25th, and the minimum 41 degrees on the 22nd—a range of 35 degrees. The warmest day was the 25th, with a mean of 65·5 degrees; and the coldest the 23rd, mean 53 degrees.

The total rainfall was 0·62 inch at Clifton, and 0·55 inch at Frampton Cotterell; the rainy days being 5 and 4 respectively. These values show a deficiency locally of about 2½ inches.

Mean atmospheric pressure was much in excess, the figures for 9 a.m. being 30·139 inches. The maximum recorded was 30·529 inches on the 15th, and the minimum 29·652 inches on the 27th.

OCTOBER.—A very wet month, with only six days entirely without rain. Apart from its frequent and heavy downpours, however, little can be said against the prevailing weather, for the temperature was most equable and well above the average for the time of year, while sunshine was by no means so scarce as might have been expected.

The mean temperature was 51·2 degrees, just two above the average, although over a degree below that of the month in 1906. The maximum was 65 degrees on the 4th, and the minimum 36 degrees on the 24th—a range of 29 degrees. The warmest day was the 6th, with a mean of 57·5 degrees; and the coldest the 24th, mean 44·5 degrees.

The local rainfall varied from 5·33 inches at Clifton to 5·25 inches at Frampton Cotterell; falling upon 25 and 22 days respectively, These amounts show an excess of almost about one and a half inches.

Mean atmospheric pressure 29·616 inches, a value exceedingly deficient. The maximum reading at 9 a.m. was 30·117 inches on the 5th, and the minimum 29·074 inches on the 17th.

NOVEMBER.—A very seasonable month, but with a temperature well above the average. Much fog prevailed during the first week, but afterwards sunshine was fairly abundant, taking into consideration the season of the year.

The mean temperature was 44·8 degrees, just one and a third above the normal. The maximum was 55 degrees on the 9th, and the minimum 30 degrees on the 30th—a range of 25 degrees. The warmest day was the 1st, with a mean temperature of 50·5 degrees; and the coldest the 29th, mean 37·5 degrees. At Frampton Cotterell four frosty nights were experienced.

The total rainfall was 3·11 inches at Clifton, and 2·70 inches at Frampton Cotterell; falling upon 19 and 17 days respectively. These quantities show a deficiency in this locality of about a quarter of an inch.

Mean atmospheric pressure was 29·981 inches, a value slightly in excess of the normal. The greatest pressure at 9 a.m. was 30·463 inches on the 30th; and the least 29·177 inches on the 26th.

DECEMBER.—Most remarkably heavy rainfalls marked the first 13 days of this month, but from then onward there was very little precipitation. Upon the whole until Christmas the weather was very mild, but from then until the close of the year a searchingly cold easterly wind prevailed without a break.

Mean temperature was two degrees above the average, the figures being 41·2 degrees. The maximum for the month was 54 degrees on the 19th, and the minimum 28 degrees on the 30th—a range of 26 degrees. The warmest day occurred on the 19th, with a mean temperature of 51·5 degrees; and the coldest on the 30th, mean 30·5 degrees. At Frampton Cotterell eight frosty nights were recorded.

Rainfall varied from 6·28 inches at Clifton to 5·86 inches at Frampton Cotterell; falling upon 19 and 16 days respectively. The excess of fall was no less than three inches.

Mean atmospheric pressure was 29·751 inches, a value decidedly below the normal. The maximum recorded at 9 a.m. was 30·327 inches on the 24th, and the minimum 29·012 inches on the 14th.

Looking at the year as a whole, although the Spring and Summer left so much to be desired, the short period of Summer in July and the remarkable weather of September did so much to remedy matters, that the season can be looked back upon with a certain amount of satisfaction.

H. H. HARDING, F.R., Met. Soc.

For the rainfall at Clifton and also for the temperature values given in the above notes, I am indebted to the courtesy of Mr. R. F. Sturge, F.R., Met. Soc.

The rainfall values for Clifton are taken at an altitude of 215 feet above sea level, and at Frampton Cotterell 166 feet.

I am extremely indebted to Mr. H. H. Harding for the great pains he takes in presenting annually his interesting summary of the year's weather.

D. S. D.

Meteorology for the 52 Weeks, ending December 28th, 1907.

Height above Mean Sea Level—250 feet.

CLIFTON COLLEGE.

1907. Week Ending		BAROMETRIC PRESSURE at 32° and Sea Level		Mean Temperature	Highest Mean Daily Temperature	Lowest Mean Daily Temperature	Max. Temperature in Shade	Min. Temperature at 1ft above ground	Min. Temperature on ground	Mean Daily Range of Thermometer	Greatest Daily Range of Thermometer	Smallest Daily Range of Thermometer	Mean Humidity	Grains of Vapour in a cubic ft. of air	Prevalent Wind.
		Mean	Highest	Lowest											
		Inches	Inches	Inches											
Jan.	5	29·78	30·28	29·28	41·3	45·4	36·6	52·1	25·4	24·9	11·8	16·9	6·9	88*	2·60*	N.W.—S.E.
,,	12	30·54	30·65	30·38	42·9	45·2	41·6	48·1	35·1	32·0	7·2	13·0	1·5	89	2·84	S.W.—N.W.
,,	19	30·65	30·78	30·49	42·0	45·2	36·6	47·6	30·7	28·9	4·8	13·4	2·3	87	2·63	W.—S.E.
,,	26	30·61	30·87	30·35	31·3	40·1	23·9	46·0	18·5	21·0	8·8	17·5	2·8	92‖	2·39‖	N.E.
Feb.	2	30·21	30·63	29·76	35·8	42·0	28·8	48·5	22·8	24·4	10·8	16·4	6·0	74†	2·12†	N.E.E. to N.W.
,,	9	30·15	30·45	29·76	33·2	36·4	27·5	47·1	21·2	22·0	12·3	17·5	7·2	86§	2·28§	N.E. to S.E.
,,	16	29·83	30·31	29·09	40·4	43·1	37·4	49·0	28·8	28·5	10·9	17·2	5·8	85	2·48	S.W.—N.W.
,,	23	29·83	30·17	29·19	39·6	46·4	30·5	51·0	24·2	26·1	8·8	12·7	5·2	84x	2·49x	W.S.W.—N.W.
March	2	30·57	30·62	30·31	40·5	43·3	36·4	50·9	24·4	24·0	15·1	24·1	5·0	91	2·53	N.W.—S.E.
,,	9	30·28	30·40	30·14	41·3	45·3	37·0	51·3	29·2	29·0	13·5	18·7	8·2	85	2·35	S.E.—N.W.
,,	16	30·13	30·54	29·79	43·5	49·3	36·0	53·1	26·4	28·5	11·0	19·0	3·4	81	2·77	N.W.—S.W.
,,	23	30·17	30·56	29·68	46·6	49·0	44·0	55·6	33·2	32·5	13·7	22·4	10·3	75	2·68	S.W.—N.N.E.
,,	30	30·35	30·54	30·01	50·2	53·3	46·9	66·2	36·5	32·9	22·0	29·7	13·3	84	2·83	N.W.—S.E.
April	6	29·59	30·01	29·11	49·3	53·7	44·0	67·4	35·5	36·0	15·5	27·3	4·6	78	2·98	E.—S.W.
,,	13	29·60	29·86	29·38	45·0	48·1	43·2	53·3	36·4	32·9	10·5	13·9	7·3	84	2·80	W.—N.E.
,,	20	29·87	30·17	29·61	45·1	49·3	40·6	56·8	31·5	28·1	13·2	18·2	0·2	63	2·46	N.E.—S.W.W.
,,	27	30·19	30·40	29·89	48·8	57·5	44·0	67·0	36·0	35·0	11·4	19·0	7·5	84	3·43	W.—N.E.
May	4	29·74	30·03	29·43	47·4	49·4	42·9	53·3	33·7	30·9	10·9	18·4	5·8	74	2·80	N.W. by W.
,,	11	29·77	29·82	29·64	55·7	61·5	51·4	70·1	41·7	38·0	14·8	19·5	9·8	74	3·69	E.—S.
,,	18	30·00	30·29	29·85	54·2	65·9	48·1	76·4	42·5	40·1	13·8	20·9	7·1	71	3·30	N.W.—N.N.E.
,,	25	29·90	30·19	29·64	49·3	56·2	45·6	68·1	39·1	37·2	14·4	24·9	6·4	75	3·18	E.
June	1	29·97	30·19	29·49	55·8	59·8	50·8	71·1	43·1	42·5	11·9	22·5	1·3	84	4·15	N.W.W.—S.E.—N.W.W.
,,	8	29·84	30·02	29·70	54·9	60·2	51·3	67·9	45·9	42·4	10·6	15·4	4·7	77	3·64	Wly.
,,	15	29·83	30·03	29·63	58·1	61·9	55·9	75·0	47·8	46·8	12·4	26·1	5·3	91	5·00	S.W.
,,	22	30·06	30·23	29·91	56·3	59·1	53·9	64·8	47·1	44·9	12·5	16·6	9·9	72‡	3·74‡	Wly.
,,	29	29·92	30·02	29·81	54·8	56·6	52·5	62·0	46·8	44·2	10·9	15·2	8·2	78	3·89	W.N.W.

* Average for 6 days. Wet bulb frozen on Sunday, 30th December, 1906.

‖ Average for 3 days. 21st, 22nd and 23rd January. Wet bulb frozen on other 4 days.

† Average for 4 days, 28th, 29th, 30th and 31st January.

§ Average for 3 days, 5th, 6th and 7th February. Wet bulb frozen on other days.

x Average for 6 days. Wet bulb frozen on 23rd February.

‡ Average for 6 days June 16th wet bulb, Ther. dry.

Meteorology for the 52 Weeks—Continued.

Height above Mean Sea Level—250 feet.

CLIFTON COLLEGE.

1907.	BAROMETRIC PRESSURE at 32° and Sea Level			Mean Temperature	Highest Mean Daily Temperature	Lowest Mean Daily Temperature	Max. Temperature in Shade	Min. Temperature at 4ft above ground	Min. Temperature on ground	Mean Daily Range of Thermometer	Greatest Daily Range of Thermometer	Smallest Daily Range of Thermometer	Mean Humidity	Grains of Vapour in a cubic ft. of air	Prevalent Wind.
Week Ending	Mean	Highest	Lowest												
	Inches	Inches	Inches												
July 6	29·87	30·04	29·62	53·6	55·9	50·4	62·0	46·2	45·0	12·4	15·6	9·7	79	3·74	Wly.
,, 13	30·19	30·52	29·88	55·9	56·8	54·5	66·8	45·8	44·9	12·8	21·0	7·6	72	3·69	W.—N.
,, 20	30·28	30·45	30·14	66·4	70·8	59·3	52·0	55·0	50·8	20·4	23·0	12·0	75	5·08	N.—N.E.
,, 27	29·98	30·13	29·92	63·4	68·9	58·9	79·0	55·2	55·0	13·2	20·2	6·1	79	4·88	S.—E.—S.W.—W.
Aug. 3	30·01	30·15	29·80	60·1	63·5	56·5	69·5	50·0	47·0	12·5	19·4	7·3	72	4·35	S.—N.W.
,, 10	29·93	30·10	29·84	60·9	65·2	58·4	68·9	52·5	51·0	10·2	16·3	7·4	76	4·74	Wly.
,, 17	36·02	30·09	29·98	60·5	63·6	57·8	70·1	50·0	47·9	15·5	27·0	10·1	74	4·61	S.—W.
,, 24	30·14	30·41	29·87	59·1	64·1	56·0	65·0	49·0	46·0	9·8	14·5	5·0	76	4·42	N.N.W.—W.
,, 31	30·11	30·18	30·03	61·0	62·7	58·2	72·2	50·6	47·6	14·1	21·3	6·8	81	4·83	Wly.
Sept. 7	29·98	30·20	29·75	57·6	64·5	53·1	70·1	41·3	41·9	13·8	23·7	10·0	80	4·38	N.W.W.—S.
,, 14	30·31	30·48	30·18	61·6	66·1	59·0	75·1	49·0	45·9	18·4	26·1	12·0	76	4·35	E.—N.E.
,, 21	30·45	30·50	30·40	58·9	62·0	54·6	74·1	44·3	40·9	17·8	24·1	11·6	83	4·27	N.W.—N.E.
,, 28	30·02	30·50	29·78	59·7	64·8	53·1	75·0	42·2	40·0	18·9	28·2	11·3	83	4·27	S.E.—N.E.
Oct. 5	29·77	30·13	29·48	55·4	60·6	51·3	64·6	44·6	41·1	11·2	18·5	4·8	79	4·02	N.E.—S.E.—N.E.
,, 12	29·71	30·09	29·53	52·5	57·4	46·2	62·2	38·5	37·0	10·6	15·5	6·1	87	3·89	N.E.—S.E. & S.
,, 19	29·51	29·82	29·10	50·3	54·7	45·0	59·1	38·8	36·1	9·4	13·3	5·0	86	3·59	W.—N.E.—S.E. & S.
,, 26	29·83	30·01	29·42	49·4	53·5	45·3	59·2	38·2	34·6	9·5	17·0	6·0	92	3·48	S.W.
Nov. 2	29·66	30·02	29·16	48·2	51·5	45·1	55·1	38·2	35·0	10·1	15·6	3·7	90	3·49	Ely.
,, 9	29·95	30·21	29·57	48·0	51·3	43·5	55·1	38·9	34·8	8·1	11·0	4·4	92	3·62	Ely.
,, 16	30·14	30·35	29·90	45·9	48·7	40·6	53·0	32·2	30·2	10·4	16·9	6·8	88	3·12	N.—W.
,, 23	30·18	30·41	29·76	43·3	45·0	41·0	52·9	37·1	32·0	7·7	15·8	1·9	89	3·01	N.—S.E.—S.
,, 30	29·76	30·49	29·19	43·2	48·0	36·5	56·1	30·8	28·4	10·7	11·0	4·4	86	2·69	S.W.
Dec. 7	29·65	30·17	29·19	42·7	46·0	38·7	55·1	31·2	29·1	11·7	18·1	6·1	90	2·81	Wly.
,, 14	29·37	29·56	29·11	43·9	50·5	38·4	55·1	33·5	31·1	8·4	15·6	5·3	83	2·81	N.W.—S.W.
,, 21	30·03	30·26	29·76	48·1	56·7	39·4	55·1	33·8	28·9	8·5	15·0	1·3	88	3·32	S.E.—S.
,, 28	29·99	30·34	29·63	38·9	45·6	32·6	51·0	31·2	28·0	5·0	10·8	2·5	82*	2·52*	N.—E.

* Average for 6 days. Wet bulb frozen on Saturday, 28th December.

Rainfall of 1907.

Taken at Clifton College.

WEEK. ENDING.		RAIN INCHES.	WEEK ENDING.		RAIN INCHES.
January	5	1·300	July	6	1·682
,,	12	·080	,,	13	·330
,,	19	·015	,,	20	Nil
,,	26	·625	,,	27	·825
February	2	·185	August	3	·115
,,	9	·150*	,,	10	·865
,,	16	·895	,,	17	·663
,,	23	·815	,,	24	·114
March	2	·065	,,	31	·079
,,	9	·190	Sept.	7	·620
,,	16	·785	,,	14	Nil
,,	23	·117	,,	21	Nil
,,	30	Nil.	,,	28	Nil
April	6	·455	October	5	·287
,,	13	1·850	,,	12	1·550
,,	20	·320	,,	19	1·510
,,	27	·955	,,	26	·920
May	4	·800	Nov.	2	1·045
,,	11	·610	,,	9	·760
,,	18	·100	,,	16	·087
,,	25	·715	,,	23	·775
June	1	·440	,,	30	1·300
,,	8	·425	Dec.	7	2·750
,,	15	·930	,,	14	3·050
,,	22	·325	,,	21	·165
,,	29	1·150	,,	28	·250 (?)

*050—Melted Snow.

D. RINTOUL.

Rainfall 1907.

MONTH.	Rainfall in Inches.	Average of 26 Years.	Departure from Average.	No of days on which ·01 inches or more rain fell
January	2·065	2·687	– 0·622	15
February	1·925	2·204	– 0·279	14
March	1·092	2·298	– 1·206	14
April	3·682	2·204	+ 1·478	18
May	2·525	2·023	+ 0·502	19
June	3·210	2·323	+ 0·887	22
July	2·602	2·767	– 0·165	15
August	2·341	3·155	– 0·814	18
September ..	0·620	2·665	– 2·045	5
October	5·252	3·882	+ 1·370	25
November	2·982	3·016	– 0·034	18
December	6·215	3·406	+ 2·809	18
	34·511	32·630	+ 1·881	201

D. RINTOUL.

PART III.

CITY HOSPITALS.

Report of the General Medical Superintendent (Administrative).

The Hospitals administered by the Hospitals Sub-Committee of the Health Committee at present consist of :—

Ham Green—Fever, providing 135 beds at 2,000 cubic feet.

Novers Hill—Small-pox or Fever, providing 35 beds, making a total of 170 beds for a population of 367,979 people. This is about half the amount of provision suggested in the Local Government Board's Memorandum of August, 1900 (" On the provision of Isolation Hospital Accommodation by Local Authorities "), and, as a consequence, considerable judgment has to be used in the selection of cases for removal.

During the year 1906, the Hospitals Committee decided in view of the favourable decline in the prevalence of Diphtheria, that Clift House Hospital, which had been re-opened in October, 1900, to provide 21 beds for Diphtheria, might be closed, and this resolution took effect in July, 1906. The result has been to increase pressure upon the space at Ham Green, the occupation of which has upon occasions risen to 200 patients. This, in effect, amounts to overcrowding. The average daily number of patients in Ham Green during 1907 was 147.

The alternating use of Novers Hill Hospital for Small-pox and Fever has become possible owing to the practical certainty with which the extinction in a short time of Small-pox introductions has been secured during the past 11 years.

In 1906, this disease proved somewhat more troublesome than usual, and the Hospital was in use for Small-pox between January and June for 140 days, but was open for 225 days during the rest of the year for fever cases.

In 1907, this Hospital was in use for Small-pox in February and March for 50 days, but was open for 313 days during the rest of the year for Fever cases.

This alternating use is undoubtedly economical, and provides some relief to the pressure upon Ham Green.

When Novers Hill is occupied by Fever cases, a temporary wooden block for 12 beds is the only provision retained against Small-pox invasion for the whole City, and by the exercise of extreme care it has proved sufficient.

As in previous years, the beds on the Hospital Ship, belonging to the Port Sanitary Committee, have been used for Convalescent Small-pox, so as to facilitate the early clearance of the Novers Hill wards.

Except by the closure of Clift House, which displaced eleven persons, no alteration in the Nursing and Domestic Staff, other than the routine variations for holiday duty, general training, Small-pox incidence, and special sewing requirements, has been found necessary.

The medical and nursing administration of Ham Green and Novers Hill Hospitals has been ably carried out by the Medical Officers and Matrons in Charge.

The most urgent matter that has come up for consideration recently, has been the overcrowding at Ham Green.

As most of the Fever patients are children, the encroachment upon cubic space is not of so great importance, but it is certainly undesirable, in the interests of the patient, of the City, and of the Medical Officer, that so large a number as 200 patients should at any time be left in charge of a single Medical Officer, without any other resident medical assistance, and grave difficulty might result at any time.

This matter will no doubt receive your early and careful consideration.

I am, Gentlemen,

Your obedient Servant,

D. S. DAVIES, M.D.,
General Medical Superintendent.

CITY HOSPITAL, HAM GREEN, BRISTOL.

Report of the Resident Medical Officer for the Year 1907.

To the Members of the Committee of Management.

Gentlemen,

I have the honour to submit to you the Ninth Annual Report, dealing with the work of the above Hospital, for the statistical year ending December 28th, 1907.

There were 152 patients in Hospital at the beginning of the year, 889 patients were admitted, 854 discharged well, and 50 died, thus leaving 137 patients in Hospital at the end of the year.

The admissions numbered 72 more than in the preceding year, and were the highest yet recorded.

The average daily number of patients in Hospital was 147·2 which is much higher than in the preceding year. The highest daily number was 200 on March 5th and April 5th, and the lowest 94 on August 31st.

The average length of stay in Hospital of patients who recovered was 61·6 days, of fatal cases 10 days.

The average death-rate among the patients for all diseases was 5·5 per cent.; nine deaths occurred within 48 hours of admission to Hospital, if these be excluded, the corrected mortality rate becomes 4·5 per cent.: both these rates are slightly higher than those of 1906, the increase being due to the large proportion of cases of Diphtheria admitted in which the death-rate is high.

Statistical tables are appended, showing the diseases treated, mortality rates, complications observed, and other particulars.

SCARLET FEVER.

83 cases were in Hospital at the beginning of the year; 370 cases were admitted; 405 cases were discharged well, and 15 died, thus leaving 33 cases in Hospital at the end of the year.

Removal to Hospital was effected in 84 per cent. of the cases during the first week of illness, compared with 81 per cent. last year.

Age Incidence.—Of the patients admitted 32·6 per cent. were under 5, 44·7 per cent. between 5 and 10, 15·5 per cent. between 10 and 15, and 7·1 per cent. over 15 years of age.

The average length of stay in Hospital of patients who recovered was 56·2 days; of fatal cases 21·3. The longest stay of any one patient was 169 days.

The chief cause of long detention in Hospital were Rhinorrhœa, Otorrhœa, and tardy Desquamation.

Fatality Rate.—Calculated on the discharges, the fatality rate was 3·5 per cent., the rate in males being more than thrice that in females: one death occurred within 48 hours of admission, if this be excluded the rate becomes 3·3 per cent.

Of the deaths 73 per cent. occurred in patients under 5, and 93 per cent. in patients under 10.

Symptoms and Diagnosis.—The type of the disease was generally speaking rather more severe than in the preceding year. About 86 per cent. of the patients suffered from Scarlatina Simplex, and 14 per cent. from Scarlatina Anginosa. The Diagnosis in 18 cases remained doubtful throughout.

Of 48 cases notified as Scarlet Fever, 28 were cases of Scarlet Fever and Diphtheria, 15 German Measles, 2 Measles, and 1 each Diphtheria, Tonsillitis, and nil.

Cause of Death.—Of the deaths 8 resulted from Toxæmia and Syncope and 7 from complications, viz.: one each from Broncho-pneumonia, Pneumonia, Bronchitis, Cellulitis of Neck and Hæmorrhage, Septic Arthritis (Hip.), Congenital Heart Disease, Chorea and Exhaustion.

Complications.—**Rhinorrhœa** was marked in 41 cases, in 19 of which the Diphtheria Bacillus was found in free growth, Otorrhœa occurred in 77 cases; in 26 of these the right, in 20 the left, and in 31 both ears were affected.

Cervical Adenitis was severe in 14 patients, and in 10 of these Abscess supervened. Cellulitis of the neck occurred in 3 cases.

Severe *Aphthous Stomatitis* occurred in two cases, *Albuminuria*, variable in duration and occurring chiefly during convalescence was found in eight cases. True *Nephritis* was noted in nine patients. *Scarlatinal Rheumatism* was marked in seven cases, in one of which heart mischief resulted. *Bronchitis* occurred in three cases, and *Pneumonia* in four.

Mastoid Abscess occurred in one case. Five distinct cases of *Relapse* occurred, and in five cases patients suffered from *Onychia*. One patient developed *Septic Arthritis* of the left hip-joint.

Sequelæ.—Eight patients were discharged with slight Otorrhœa.

"**Return Cases.**"—Infection was apparently carried home in the case of four patients out of a total of 405 discharges, giving a "return case" rate of rather less than 1 per cent. The average length of stay in Hospital of the infecting cases was 48 days, and the average interval between the return home of the patient and the "return case" ten days. All the infecting patients had uncomplicated attacks.

DIPHTHERIA.

65 cases were in Hospital at the beginning of the year; 445 were admitted (including one case sent in as Scarlet Fever), 387 were discharged well, and 34 died, thus leaving 89 patients in Hospital at the end of the year.

Removal to Hospital was effected in 89 per cent. of the cases where a definite history of onset could be ascertained, during the first week of the illness, as compared with 85 per cent. in 1906, but only 29 per cent. were admitted on or before the fourth day of the disease, up to which time the good effects of Antitoxin are so marked.

The average day of the disease on admission in cases which proved fatal was the 5th.

The Diphtheria Bacillus was found before admission in 393 out of 460 cases notified as Diphtheria; of the other 67, in 37 no culture was taken, in 18 the culture was negative, and in 12 the culture contained suspicious organisms.

Age Incidence.—Of the patients admitted, 24·8 per cent. were under 5 years of age, 45·7 per cent. between 5 and 10, 19·6 per cent. between 10 and 15, and 9·8 per cent. over 15.

The average length of stay in Hospital of cases which recovered was 60·6 days, of fatal cases 5·2 days. The longest stay of any one patient was 196 days.

Paralysis of various parts and the persistence of the organism in the nose, throat, or ear, were chiefly responsible for long detention.

Fatality Rate.—Calculated on the discharges, the fatality rate was 8 per cent. Eight deaths occurred within 48 hours of admission ; if these be excluded the rate becomes 6·2 per cent. The death rate in females was rather less than in males. 38 per cent. of the deaths occurred in patients under 5, 91 per cent. in patients under 10, and 9 per cent. in patients over 10 years of age.

As a number of patients harbouring the Diphtheria Bacillus, but with few clinical symptoms, were received for treatment, the cases have been divided into two classes :

1.—373 cases with clinical symptoms, in which the fatality rate was 9·1 per cent.

2.—48 cases, chiefly of the nasal variety, in which the fatality rate was nil.

Symptoms and Diagnosis.—The disease was confirmed bacteriologically before admission in 393 cases of the 460 notified as Diphtheria, but five of these were found on admission to be cases of Scarlet Fever harbouring the Diphtheria Bacillus (Diphtheria " carriers.")

37 cases in which no culture was taken were clinically Diphtheria.

Of 18 cases in which the culture was negative, eight were clinically Diphtheria, two were Catarrhal Laryngitis, and one each was Cancrum Oris, Pneumonia, Tonsillitis, Pertussis, Syphilis, Measles, Bronchitis, and Nil.

Of 12 cases in which the culture was suspicious, eight were clinically Diphtheria, three were somewhat doubtful, and the other was a case of Tonsillitis.

The seat of the disease in the 445 cases (including one case sent in as Scarlet Fever) was as follows :—

Throat	367
Nose	34
Nose and Throat	20
Throat and Larynx	15
Ear	4
Throat, Nose and Larynx ..	2
Throat and Ear	1
Eye	1
Cheek, Gum, and Tongue ..	1
Total..	445

The percentage of cases in which the nose was affected was 12·5 : in 28 other throat cases the Diphtheria Bacillus was subsequently found in the nose.

Early Albuminuria was present in 52 per cent. of the clinical cases.

Marked irregularity of the pulse in force and frequency during convalescence and necessitating treatment was observed in 40 per cent. of the cases.

Cause of Death.—All the deaths were due to Toxæmia and Syncope. These figures emphasize the need for very early injection of antitoxin in order to avert a fatal result.

Complications.—Severe Adenitis was noted in 16 cases, and Cellulitis of the neck in seven.

Otorrhœa occurred in 12 cases, in 10 of which the Diphtheria Bacillus was found in the discharge.

Rhinorrhœa, generally purulent and at times sanious, was marked in 41 cases.

Epistaxis was severe in 18 cases, and in 13 troublesome vomiting occurred.

Broncho-pneumonia was noted in two and Bronchitis in four cases.

Nephritis occurred in one case, and Purpura in two.

Relapse was noted in three cases.

The following Paralyses were also observed; Soft Palate in 68 cases, Ciliary Muscle in 11, Ocular Muscles in seven, Skeletal Muscle in two, Face in three, and Eye-lid in two cases.

Treatment.—Active local antiseptic treatment was carried out in all cases.

An Antitoxin Rash was observed in 52 of the clinical cases, or in 24 per cent. of the injected patients; the most common day for the rash to appear was the 9th after injection; the rash was usually urticarious but at times urticario-papular.

43 of the patients had received some Antitoxin before admission.

Tracheotomy was performed in one case, but the case ended fatally. Two patients were admitted from the Royal Infirmary the day after Tracheotomy had been performed, one of whom recovered, and the other died.

During the year 2,069 bacteriological examinations were performed from cases or suspected cases of Diphtheria, of which 114 were done at the Hospital, and 1,955 by the City Bacteriologist.

MIXED INFECTIONS.

A large number of patients during the year were found to be suffering from more than one disease, or were incubating a second disease on admission: these cases unless at once recognised and isolated are a source of great danger to other patients.

The average length of stay in Hospital of such cases was 117 days. The longest stay of any one patient was 230 days.

The cases are divided into three groups :—

Group 1.—*Cases notified and admitted as suffering from two diseases.*

Ten patients were admitted suffering from Diphtheria and Scarlet Fever.

Group 2.—*Cases which were found on admission or shortly afterwards to be suffering from a second disease also, the infection of which was received before admission.*

28 patients sent in as cases of Scarlet Fever, and five as cases of Diphtheria, were found to be cases of Scarlet Fever and Diphtheria.

One Scarlet Fever patient was suffering from Chicken-Pox also on admission, and two Scarlet Fever patients from Whooping Cough. Three Diphtheria and five Scarlet Fever patients were incubating Rötheln (German Measles) on admission. One Diphtheria patient was incubating Chicken Pox on admission.

Group 3.—*Cases which received the infection of a second disease whilst in Hospital.*

The introduction of so many patients actually suffering from or incubating German Measles (see above and Table II.) gave rise to 14 other cases. One Diphtheria patient developed a mild attack of Scarlet Fever, and two Scarlet Fever patients suffered from Post-Scarlatinal Diphtheria. All made good recoveries.

OTHER DISEASES.

Of 19 patients notified as cases of Scarlet Fever, 15 were suffering from German Measles, two from Measles, one from Tonsillitis, and one nil. Of 11 patients notified as cases of Diphtheria, two each were suffering from Tonsillitis and Catarrhal Laryngitis, and one each from Pneumonia, Bronchitis, Cancrum oris, Pertussis, Syphilis, Measles, Nil. One patient admitted as suffering from Measles was found to be a case of Rötheln. All the above patients needed strict isolation, the *average length of stay* in Hospital being 39·8 days.

ENTERIC FEVER.

Four patients who were in Hospital at the beginning of the year were discharged well.

The average length of stay in Hospital of the patients was 64·2 days.

Vaccination Statistics.

All patients were examined on admission as to their state of Vaccination with the following result :—

Unvaccinated	194
No mark, but said to have been Vaccinated	5
One Mark	278
Two Marks	167
Three Marks	153
Four or more Marks	92
Total..	889

Thus of 889 patients examined 21·8 per cent. were unvaccinated, whilst of those Vaccinated 31·2 per cent. had one mark, 18·7 per cent. had two marks, 17·2 per cent. had three marks, and only 10·3 per cent. had four marks as prescribed by the Local Government Board. In 59 out of 278 patients who had only one mark, the Cicatrix was very small and poorly foveated.

Re-vaccination was found to have been performed on 27 patients, the majority of whom came from Public Institutions.

STAFF ILLNESS.

One Nurse contracted Enteric Fever. Five Nurses and one Maid contracted Diphtheria. Two Nurses contracted Rötheln. All made good recoveries.

Other minor illnesses occurred during the year. The total loss of service in time entailed by illness of all kinds amounted to 634 days.

General.

I have again throughout the year noted all cases of Pediculosis occurring among patients admitted, with the following results:—Out of 889 Males and Females examined, 499 or over 56 per cent. had nits or lice or both in their hair, which required active treatment, and in many cases necessitated cropping the hair; but whilst 44 per cent. of the Males' heads were dirty, 65 per cent. of the Females' were found so. Two were suffering on admission from Ringworm of the Scalp, 11 from Impetigo, and 13 were very badly flea-bitten over the body.

During the year 21,305 articles of clothing were disinfected by steam in the Hospital Disinfector.

The Observation Pavilion has proved of great service in dealing with cases of Mixed Infections and diseases other than Scarlet Fever or Diphtheria.

Two *post-mortems* were performed during the year to confirm the cause of death.

In conclusion I beg to acknowledge the services rendered by the Matron (Miss Garden), and the good work done by the Nursing and Working Staffs.

I am, Gentlemen,

Your obedient Servant,

JAMES FLETCHER, M.D., D.P.H.,
Resident Medical Officer.

HAM GREEN HOSPITAL.

TABLE I.

Admissions and Discharges during 1907, with the number of Patients in Hospital at the beginning and end of year.

Disease.	Remaining in Hospital at end of year 1906		Admitted.		DISCHARGED.				Remaining in Hospital at end of Year 1907.	
					Recovered.		Died.			
	M	F	M	F	M	F	M	F	M	F
Scarlet Fever	33	50	166	204	177	228	11	4	11	22
Diphtheria	37	28	194	251	180	207	17	17	34	55
Enteric Fever	1	3	—	—	1	3	—	—	—	—
Mixed Infections	—	—	24	19	20	12	—	—	4	7
Other Diseases	—	—	13	18	11	15	—	1	2	2
Totals	71	81	397	492	389	465	28	22	51	86
	152		889		854		50		137	

HAM GREEN HOSPITAL.

TABLE II.

Cases Notified as	CASES PROVED TO BE													
	Scarlet Fever.	Diphtheria.	Scarlet Fever & Diphtheria.	Rötheln.	Measles.	Tonsillitis.	Catarrhal Laryngitis.	Cancrum Oris.	Pneumonia.	Bronchitis.	Pertussis.	Syphilis.	Nil.	Totals.
Scarlet Fever (418) ..	370	1	28	15	2	1	..	..	..	..	..	..	1	418
Diphtheria (460) ..		444	5	..	1	2	2	1	1	1	1	1	1	460
Scarlet Fever & Diphtheria (10) ..	..	..	10	..	..	..	..	..	..	..	..	..	..	10
Measles (1)	..	..	..	1	..	..	..	..	..	..	..	..	..	1
	370	445	43	16	3	3	2	1	1	1	1	1	2	889

HAM GREEN HOSPITAL.

TABLE III.

Monthly admissions and average daily number in Hospital.

	Scarlet Fever.		Diphtheria.		Mixed Infections.		Other Diseases.		Average Daily No. in Hospital in each Month.
January ...	47	135	36	102	11	23	3	12	164·5
February ..	47		35		8		3		174
March ...	41		31		4		6		189·3
April ..	22	103	33	90	2	6	0	7	173·1
May ..	56		28		2		4		146·3
June ..	25		29		2		3		157·7
July ..	19	62	35	108	0	2	3	6	117·4
August ..	18		27		0		0		99·5
September...	25		46		2		3		101·9
October	30	70	52	145	1	12	2	6	136·8
November ...	24		54		6		0		155·6
December ...	16		39		5		4		152·7
Year 1907	370		445		43		31		147·2

HAM GREEN HOSPITAL.

TABLE IV.

Showing Ages and Sexes of Patients Discharged during the year 1907, with the Fatality Rate.

Scarlet Fever.

Age.	MALE.			FEMALE.			TOTAL.		
	Recovered.	Died.	Fatality per cent.	Recovered.	Died.	Fatality per cent.	Recovered.	Died.	Fatality per cent.
0-1 ...	2	2	50·0	4	...	...	6	2	25·0
1-2 ..	4	1	20·0	4	...	...	8	1	11·1
2-3 ...	16	2	11·1	10	2	16·6	26	4	13·3
3-4 ...	16	2	11·1	30	1	3·2	46	3	6·1
4-5 ...	22	1	4·3	24	....	...	46	1	2·1
5-6 ...	22	..	...	28	1	3·4	50	1	1·9
6-7	17	1	5·5	25	...	...	42	1	2·3
7-8 ...	21	...	..	20	...	...	41	...	...
8-9 ...	9	...	...	18	..	...	27	..	...
9-10 ...	9	1	10·0	12	...	...	21	1	4·5
10-15 ...	30	...	...	33	...	...	63	...	...
15-20 ...	3	1	25·0	7	...	...	10	1	9·0
Over 20 ...	6	...	...	13	...	...	19	...	...
Totals...	177	11	5·8	228	4	1·7	405	15	3·5

Diphtheria.

Age.	MALE.			FEMALE.			TOTAL.		
	Recovered.	Died.	Fatality per cent.	Recovered.	Died.	Fatality per cent.	Recovered.	Died.	Fatality per cent.
0-1 ...	2	...	...	1	...	...	3	...	....
1-2 ...	3	...	...	2	...	...	5	...	...
2-3 ...	8	1	11·1	7	...	...	15	1	6·2
3-4 ...	20	5	20·0	11	2	15·3	31	7	18·4
4-5 ...	13	2	13·3	29	3	9·3	42	5	10·6
5-6 ...	20	2	9·0	20	1	4·7	40	3	6·9
6-7 ...	18	3	14·2	27	1	3·5	45	4	8·1
7-8 ...	17	1	5·5	17	5	22·7	34	6	15·0
8-9 ...	16	...	...	12	4	25·0	28	4	12·5
9-10 ...	10	...	...	20	1	4·7	30	1	3·2
10-15 ...	39	3	7·1	37	...	...	76	3	3·7
15-20 ...	8	...	...	11	..	...	19	...	...
Over 20 ..	6	...	...	13	...	...	19	...	...
Totals ...	180	17	8·6	207	17	7·5	387	34	8·0

HAM GREEN HOSPITAL.

TABLE V.

The Stage of the Disease when Patients were admitted to Hospital.

DAYS OF 1ST WEEK.								WEEK OF ILLNESS.				
Disease.	1	2	3	4	5	6	7	1st	2nd	3rd	4th & over.	Total.
Scarlet Fever	—	24	73	72	77	48	19	313	42	10	5	**370**
Diphtheria	—	3	35	75	114	83	39	349	35	7	—	**391**

HAM GREEN HOSPITAL.

TABLE VI.

Complications observed in Patients discharged during 1907.

Scarlet Fever.

	Otorrhœa.	Rhinorrhœa.	Albuminuria.	Adenitis.	Bronchitis.	Nephritis.	Pneumonia.	Arthritis.	Cervical Abscess.	Carditis.	Cellulitis.	Relapse.	Aphthous Stomatitis.	Mastoid Abscess.	Onychia.
In 405 non-fatal cases	74	35	7	11	1	9	2	6	8	1	2	4	2	1	5
In 15 fatal cases ...	3	6	1	3	2	...	2	1	2	...	1	1	...	...	...
Total 420 cases ...	**77**	**41**	**8**	**14**	**3**	**9**	**4**	**7**	**10**	**1**	**3**	**5**	**2**	**1**	**5**
Percentage	18·3	9·7	1·9	3·3	0·7	2·1	0·9	1·6	2·3	0·2	0·7	1·1	0·4	0·2	1·1

Diphtheria.

	Paralysis.	Severe Vomiting.	Otorrhœa.	Adenitis.	Epistaxis.	Pneumonia.	Cellulitis.	Purpura.	Bronchitis.	Relapse.	Nephritis.	Rhinorrhœa.
In 339 non-fatal cases ...	65	2	12	3	5	2	1	...	4	3	1	29
In 34 fatal cases ...	3	11	...	13	13	...	6	2	...	...	...	12
Total 373 cases ...	**68**	**13**	**12**	**16**	**18**	**2**	**7**	**2**	**4**	**3**	**1**	**41**
Percentage	18·2	3·4	3·2	4·2	4·8	0·5	1·8	0·5	1·0	0·8	0·2	10·9

HAM GREEN HOSPITAL.

Statistics for each Year since opening of Hospital.

TABLE VII.

Admissions Classified according to DISEASE.

YEAR.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Mixed Infections.	Other Diseases.	TOTAL.
1899 (From July 24th)	194	4	21	...	7	226
1900	571	70	38	..	..	679
1901	452	27	44	...	4	527
1902	536	128	42	21	...	727
1903	370	323	11	11	...	715
1904	374	317	26	2	...	719
1905	476	310	...	19	12	817
1906	439	342	8	9	19	817
1907	370	445	...	43	31	889
Totals	3,782	1,966	190	105	73	6,116

Discharges and Deaths.

YEAR.	Scarlet Fever.		Diphtheria.		Enteric Fever.		Mixed Infections and other Diseases.	
	Dis-charges.	Deaths.	Dis-charges.	Deaths.	Dis-charges.	Deaths.	Dis-charges.	Deaths.
1899 (From July 24)	127	5	3	...	3	...	5	...
1900	485	15	50	12	33	1	...	...
1901	452	10	34	1	39	5	...	..
1902	540	11	67	14	33	4	18	2
1903	377	4	308	17	17	2	12	...
1904	326	7	310	20	24	2	2	...
1905	426	16	271	13	...	...	25	5
1906	433	12	314	20	3	1	28	2
1907	405	15	387	34	4	...	58	1
Totals	3,571	95	1,744	131	156	15	148	10
Average Fatality per cent.	2·5		6·9		8·7		6·3	

BRISTOL CITY HOSPITALS.

Novers Hill Hospital.

Medical Attendant's Report for the statistical year ending December 28th, 1907.

Scarlet Fever.

Patients remaining from 1906 ..	34	180
Patients admitted	146	

Patients discharged	118	180
Patients transferred to Ham Green	17	
Patients transferred to Children's Hospital	1	
Patients died	5	
Patients remaining	39	

Small Pox.

No patients in Hospital at the end of the year, six patients were admitted during the year, one died of Hæmorrhagic Small Pox within four days of admission.

Two admitted for isolation and observation, one of these having a suspicious eruption proved to be German Measles, and the other having been in contact with an undoubted case of Small Pox and falling ill with one or two initial symptoms of that disease, turned out nothing more than a trivial indisposition. The remaining three cases were in due course discharged or transferred convalescent to the Ship.

Diphtheria.

19 cases of a mild type admitted from a public school, and all discharged in due course.

Complications.—Heart trouble 3, Rheumatism 1.

Scarlet Fever.

Ages of patients suffering from Scarlet Fever :—

Under 1 year.	1 to 5	5 to 10	10 to 15	15 to 20	20 upwards
1	33	70	31	5	7

It will be noticed that Scarlet Fever claims most victims between the age of 5 to 10. Next between 1 to 5, and under one year almost nil. There is only one case recorded under one year, and this had no clinical symptoms after admission, and was regarded as doubtful. Patients over 30 years of age are few and far between.

Scarlet Fever with Complications.

	Albuminuria	7
	Erythema Nodosum	2
	Acute Nephritis	2
	Uræmia (death)	1
	Glandular Abscess	3
	Intractable Vomiting (death)	1
	Otorrhœa	8
	Otorrhœa with Rhinorrhœa	2
	Rhinorrhœa	8
	Rheumatism	5
	Rheumatism with Pericarditis	1
	Stomatitis (severe)	2
	Pneumonia	1
	Secondary Rash	3
A.	Purpura Hœmorrhagica ..	1 (All in one and the same patient.)
	Hæmaturia	
	Glandular Abscess	
	Peritonitis	
	Pleuro-Pneumonia	
	Empyema	
	Operation (death) ..	

A. This was a most extraordinary case of complications and sequelæ, the worst in my recollection occurring in one and the same patient. On admission he was bleeding profusely from every mucous tract, and the wonder to my mind is that he should have lasted so long as he did, even after the operation for Empyema I had hope of his ultimate recovery, his tenacity to life was so marked; but he sank and died five days later, being in Hospital 19 days altogether.

Other Diseases developed apart from Complications.

	Chicken Pox	7
	Erysipelas	1
B.	Meningitis supervening on Erysipelas (death)	1
	Typical Scarlet Fever Rash after admission	4

Concomitant Diseases with Scarlet Fever on Admission.

Blepharitis	1
Diphtheria	2
Epilepsy	1
Impetigo	2
Tuberculous Ankle	1
Whooping Cough	1
Prolapsus ani	1

4 Cases proved not to be Scarlet Fever.
2 Cases doubtful.
1 Return Case.
1 said to have had Scarlet Fever before.

The case marked B. on the list was that of a Female aged 49. No traces of Scarlet Fever were visible on admission, two days afterwards Facial Erysipelas showed itself, and she was promptly isolated. All outward signs of Erysipelas soon disappeared, Meningitis manifested itself and proved fatal in four days, or 12 days after first admission to Hospital.

Chicken Pox.—An invasion of this disease occurred towards the end of the year, and was very troublesome, especially when there were other classes of infectious diseases, each one requiring separate isolation, and separate nursing attention. A great strain was put upon our limited Isolation Hospital accommodation, and the resources of the Nursing Staff were heavily taxed.

The Nursing staff continue to perform their duties to my satisfaction.

G. C. PAULI, M.R.C.S., L.R.C.P.,
Medical Attendant.

	NOVERS HILL.		HAM GREEN.	
	Year ending 25th March, 1907	Year ending 25th March, 1908	Year ending 25th March, 1907	Year ending 25th March, 1908
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Salaries and Wages:—				
Medical Superintendent	50 0 0	50 0 0	50 0 0	50 0 0
Medical Officer	218 15 0	200 0 0	208 0 0	219 15 0
Special Services as *locum tenens*	....	....	16 16 0	16 16 0
Matron	78 0 0	78 0 0	108 0 0	108 0 0
Nurses, Officers, and Servants	825 5 5	785 10 2	2484 9 5	2419 13 0
Tithe Rent	....	....	2 1 0	1 18 4
Rates	185 0 9	195 15 8	411 0 10	416 1 1
Rent of Telephone	10 10 0	10 10 0	41 0 0	41 0 0
Rent of Cottage	....	....	10 0 0	9 10 0
Insurance Premiums	13 2 11	13 2 11	53 4 8	53 4 8
Provisions, viz.: Meat	176 9 9	189 0 4	463 8 8	403 9 11
Fish and Ice	39 11 4	39 7 6	89 6 9	76 14 1
Poultry and Game	2 17 8	10 3 7	40 1 5	49 15 6
Bread and Flour	49 9 0	49 19 7	189 10 6	166 7 1
Milk, Butter and Eggs	178 8 2	192 2 4	643 14 5	589 7 4
Groceries	126 6 8	95 3 2	403 0 2	369 19 10
Vegetables and Fruit	27 5 3	19 12 3	185 9 11	198 19 0
Wine and Spirits	....	....	10 4 0	9 12 0
Mineral Waters	1 12 6	1 15 0	18 2 0	14 7 6
Timber	....	....	....	7 5 1
Coal and Firewood	161 9 0	191 10 7	599 9 1	711 0 6
Water, and Hire of Meter	19 12 3	28 17 1	309 19 2	268 5 0
Gas	76 18 5	74 15 7	....	....
Painters' Work	23 2 9	1 15 5	46 6 4	161 13 4
Plumbers' Work	7 11 1	3 1 5	....	....
Ironmongery, Fittings, and Repairs	30 1 11	41 14 2	32 7 7	54 10 9
Electrical Fittings, and Inspection of same	....	....	32 0 2	31 12 1
Maintenance of Battery	....	....	25 12 10	33 10 9
Electric Meters and Cables	....	....	11 4 6	....
Water Heaters for Baths	10 1 7	....	....	....
New Boiler	....	11 6 0	....	....
Fixing Boilers	3 12 0	....	....	....
General Repairs	14 4 9	4 17 0	....	....
Gravel	....	....	3 13 11	....
Cleaning Materials and Baskets	45 5 0	52 12 8	86 2 11	213 11 5
Oil, Candles and Paint	9 2 8	1 8 9	....	....
Sweeping Chimneys	2 10 0	1 12 11	6 7 0	9 9 2
Crockery and Glass	13 7 2	8 15 5	15 7 8	22 14 3
Mould, Seed, Plants and Manure	13 7 5	21 6 4	2 4 0	....
Garden Frame, and Water Barrels	6 11 9	....	....	....
Weed Killer	4 12 11	....	....	....
Lawn Mower	....	2 10 6	....	....
Linen, Drapery, and Uniform Clothing	57 17 0	32 18 2	218 9 1	105 18 9
Cleaning and Repairing Clocks	2 16 0	....	4 4 0	2 2 0
Drugs and Chemicals	27 4 3	41 0 7	202 7 0	244 18 7
Fire Platform and Escape	....	....	114 16 3	....
Truck	5 15 0	....	....	....
Removing Bodies	....	....	7 10 0	12 10 0
Furniture, Fittings, and Bedding	23 4 0	12 3 4	3 5 7	6 1 0
Curtains	6 11 3	....	....	....
Printing, Stationery, and Advertising	23 8 0	30 11 5	73 11 9	70 19 1
Papers, Periodicals, and Books	4 1 8	4 4 5	8 8 6	11 9 3
Postage and Contract Stamps	6 5 0	7 13 9	19 0 6	17 7 3
Hauling and Cab Hire	23 9 3	16 4 9	94 19 0	91 2 3
Toys	2 14 8	2 13 6	8 4 4	5 10 3
Carriage of Goods, and Bridge Tolls	....	....	5 17 4	5 3 2
Railway and Tram Fares	....	....	7 2 8	7 3 3
Medical Consultations	....	3 3 0	21 0 0	10 4 0
Amount of Account Irrecoverable	....	....	4 0 0	....
Trestles and Planks	....	2 10 0	....	....
Slop Hopper	....	2 18 0	....	....
Contribution to Workmen's Compensation Fund	....	3 9 4	....	9 8 7
Washing Machine	....	....	....	82 0 0
Weighbridge and Foundations	....	....	....	35 13 6
Slop, Sink, and Drain Clearing Machine	....	....	....	9 2 6
Report re Engineering Staff	....	....	....	4 4 0
Petty Disbursements	5 10 2	5 8 6	10 2 9	8 13 5
Kitchen Utensils	....	4 18 5	....	....
Total Expenditure in the Year	**£2613 2 2**	**£2546 3 6**	**£7401 3 8**	**£7467 13 6**

J. CROMPTON, F.S.A.A., City Accountant.

Number of Patients in the year	174	175	1125	914
Total Cost per week for each Patient, including all the Working Expenses	s. d. 34 0	s. d. 30 7	s. d. 17 10	s. d. 18 9

PART IV.

REPORT OF THE CHIEF INSPECTOR OF NUISANCES.

PUBLIC HEALTH DEPARTMENT.
40 PRINCE STREET,
February, 1907.

1907.

TO THE CHAIRMAN AND MEMBERS OF THE HEALTH COMMITTEE.

GENTLEMEN,

I have once again the honour of submitting the following brief report, with summaries, showing the amount of work effected in this Department during the year 1907.

The complaints and applications received at the Office numbered 1,090, as against 1,128 in the previous year, a decrease of 38, all of which were duly enquired into as quickly as possible, and wherever a nuisance was found, steps were at once taken for its abatement, but in 250 of the cases so complained of, no nuisance was found, so that no action was necessary ; this works out at 23 per cent, of the whole, last year such cases were 26·7 of the whole. A considerable number of the applications were from persons changing residence who wished to have some guarantee that the house they were going to was in a good sanitary condition, and in this way a considerable amount of good sanitary work has been accomplished, as people will not take a house when the drains, &c., are known to be defective, and the owners prefer doing whatever is necessary than to lose the prospect of a tenant.

2,173 cases of notifiable infectious disease were duly enquired into by the District Inspectors and the results entered on the case cards as required by the Medical Officer of Health. Last year such cases numbered 2,286, a decrease of 113; these cases required 5,869 visits to the infected houses; many of such cases, being nursed at home, require frequent visiting; and when children attend any of the Elementary Schools, cards are made out by the Inspectors and sent to the Head Master or Mistress of the School as well as to the Clerk to the Education Committee, all of which entails a considerable amount of Clerical work.

2,057 infected houses were disinfected after such cases, and 45,578 articles of bedding, clothing, &c., removed therefrom and disinfected by super heated steam and returned to the houses, 559 similar articles were destroyed, their condition being such that disinfection was impossible.

The Clothing of all Patients removed to Ham Green and the Novers Hill Hospitals are not included in the above totals, but is disinfected at those Hospitals, which are both equipped with a Washington Lyons Steam Disinfector.

Non-Notifiable Infectious Diseases, such as Measles, Whooping Cough, Chicken Pox, Mumps, &c., were also visited on receipt of notification from the Elementary Schools that Children from certain houses were absent from school in consequence of such disease, 1124 visits were paid to such houses and leaflets of precautions, necessary in such cases, given to the parents and in acute cases, the parents were advised to secure proper medical attendance, and often did so. Disinfection is also offered and carried out wherever considered advisable, or of any practical use.

Small Pox has not caused much extra work during the year, as only six cases were notified, so that I need say no more about it.

Phthisis has again caused a considerable amount of work, 542 cases having been notified, and 384 deaths occurred during the year, a slight reduction from last year, when there were 698 notifications and 404 deaths. There are now over 700 cases of this terrible disease under observation in the City, all of which are visited periodically, and all rooms occupied by such patients, are after death, or removal from one house to another, disinfected by spraying with formalin. It will thus be seen what a large amount of additional work the notification of this disease has thrown on to the Inspectors of this department, but if such action has the effect of even reducing the number of cases and deaths, it will not have been in vain.

Notices to Abate Nuisances.

The informal or preliminary notices numbered 1,450 which were generally successful, 406 formal or Statutory Notices were served, but the great majority of these had reference to party or combined drains, all of which were complied with without appealing to the Justices, except one, in which a summons was issued, but before the day of hearing the work was done, the case was then withdrawn on the owner of the premises paying the costs. In addition to the informal written notices many verbal requests were given to Owners of property with very satisfactory results, as there are many owners who do not care to be served with the formidable looking blue papers; besides this I find from the letter book that I have personally written 1,099 letters during the year.

The usual Summaries of work effected by the District and Special Inspectors are appended.

Houses Let in Lodgings or Tenement Houses.

These are the same in number as last year, but there are now a considerable number of others waiting measuring for registration purposes, which I trust will not be long first, as I am now promised the necessary assistance, and I have no doubt that such work will prove to be a material factor in preventing overcrowding and keeping such houses in a cleanly condition.

Housing of the Working Classes Act, 1890.

18 Houses have been dealt with, 5 of these have been closed without applying to the Justices for closing orders. 10 closed under Justices orders, absolutely, as they cannot possibly be made fit for habitation, and the other three closed under similar orders until they are rendered fit for habitation, one of which has already been so rendered. This work is still going on, a number of similar houses being under notice.

Slaughter Houses are the same in number as last year, viz.: 114, 71 of which have permanent licenses, 39 annual licenses, two for the slaughter of Foreign Animals at the Docks (Avonmouth and Cumberland Basin), and two knackers' yards. The occupiers of 14 of the permanent licensed houses are under agreement to give up slaughtering therein without compensation, should public abattoirs be established in the City, on receipt of six months' notice from the Authority, that they are to do so.

I can, and do again bear testimony to the energy of your two Meat and Fish Inspectors: Messrs. Thomas and Gitsham, who, during the year have been responsible for the destruction of 50 tons, 10 cwt. 1 qr. and 8 lbs. of Meat of various kinds, which were unfit for food. Consisting of:—

The entire carcases of 32 Beasts.
,, ,, 30 Sheep.
,, ,, 102 Pigs.
,, ,, 3 Calves.

The remainder consisting of parts of carcases and odd pieces of meat. There were also destroyed for the same reason, 14 rabbits, 200 tins of canned fruit, 453 packages of fish (not weighed), 437 packages of vegetables, and 60 packages of fruit of various kinds.

The question of providing Public Abattoirs is again being considered, and I can only hope that those considerations will have the desired effect, as it must be obvious that it is quite impossible for two inspectors to see but a portion of the animals slaughtered in 110 private slaughter houses, scattered all over the City, besides the two for Foreign animals at the Docks, in proof of which I find from figures kindly supplied by the butchers that during the year 1906, 207,153 animals of various kinds were killed in the City, including Avonmouth Docks, and the carcases of 99,270 were inspected thus leaving 107,883 carcases without inspection, besides this there are an immense number of carcases brought into the City from outside districts, nearly 6,000 such having been inspected during that year, but of course without the internal organs, and after dressing ; it is quite impossible to say how many others were brought into the City. These figures require no further comment from me, they speak for themselves.

Factory and Workshop Act.

The work in connection with this Act has been carried on as in previous years without friction of any kind between H. M. Inspectors and this Department, although the communications between the departments have been many and varied. There are now 1,611 Workshops registered (excluding Bakeries, which are dealt with separately), to which 5,224 visits and re-visits were paid during the year resulting in improved Sanitary conveniences, better ventilation, prevention of overcrowding of Workshops, &c., as well as Lime-washing and cleansing periodically. A Home Office Order of 1903, under Section 9 of the above Act, making it compulsory that there shall be a space ventilated to the open air between any sanitary convenience and a Workshop, has been responsible for a large number of the communications from H. M. Inspectors to this Department, and although this was frequently found to be very difficult of attainment, and in many cases the provision of such spaces has been costly to the owners, the difficulty has been surmounted by judicious tact. A glance at the various summaries appended will show how much good work has been done, resulting, without a doubt, in healthier surroundings and greater comfort to the thousands of workers in these Workshops.

In addition to the foregoing the homes of 1,396 outworkers were visited, that is people who take work to their homes from the various factories. This work consists chiefly of tailoring, boot making, and Corsets, the lists of these have to be sent in twice a year, February and August, but it is found that both lists consist very largely of the same names and addresses.

Combined or Party Private Drains.

Under the Bristol Corporation Act of 1905 this work has been continued during the past year with great success. 40 such drains to which the drainage of 299 houses were connected having been dealt with, the cost in all cases having been charged to the owners, whether the work was done by the Surveyor of the City Engineer's department or by private tradesmen.

Dairies, Cowsheds and Milkshops.

There are now 81 dairy farms within the boundaries of the City, of these 37 were added by the extension of the boundaries in 1904, and almost without exception they are situated on the very fringe of the City. These farms have been very materially improved since coming into the City, the cowsheds being better lighted, ventilated, paved, drained, &c. They, however, require great attention in order to keep the yards free from manure, which only too frequently is just thrown out of the sheds until a huge heap has accumulated, and this would go on continually unless the Inspector is constantly visiting, but these visits are not so frequent as they should be, the farms being so scattered and in such out-of-the-way places. I consider that each farm should be visited at least once a week.

There are also 1,020 Milkshops and Dairies registered in the City, the majority being small shops, where all sorts of articles besides milk are sold, which ought not to be, but at present there is no power to prevent it. Milk should only be stored and sold in shops confined to the sale of nothing but dairy products, the large and better class dairies give very little trouble, it is the small shops which give the trouble. Your Dairy Inspector, Mr. Casely, also has for some time past visited the cattle market every Thursday (market day) to see to the milking of the Cows there, and those visits have resulted in a very marked improvement in the cleanliness of the milkers' hands, the milk vessels, and the cows' teats, &c. The sale of such milk for human consumption, should, in my opinion be prohibited as it cannot be wholesome, but I know of no power to enforce this.

	DAIRIES.		COWSHEDS.		MILKSHOPS.		
	Number Inspctd	Defects Found	Number Inspctd	Defects Found	Number Inspctd	Defects Found	Discontinued
1890	90	22	35	19	455	135	100
1891	258	140	36	13	660	332	115
	No. on Register		No. of Inspctns.				
1892	1053	85	1173	33	752	200	108
1893	1019	82	1069	45	732	79	126
1894	1203	89	1089	41	677	100	56
1895	1244	71	1587	31	720	74	53
1896	1271	60	2426	39	751	76	62
1897*	1273	62	2033	55	785	35	50
1898	1300	61	2466	19	775	60	65
1899	1400	61	2499	33	787	40	73
1900	1370	23	2347	30	772	20	78
1901	1300	22	2184	33	664	67	120
1902	1300	23	2620	31	668	55	100
1903	1200	23	2049	39	609	49	93
1904†	1015	62	2340	36	543	55	100
1905	1000	83	2453	37	476	57	39
1906	1000	26	2340	38	476	57	97
1907	1020	51	2379	40	451	56	47

*City enlarged in November, 1897.

†City enlarged in October, 1904.

Offensive Trades have as usual been kept under observation, and 45 nuisances of various kinds connected therewith have been noted and abated. It must be obvious that these places require frequent and careful watching, as from the very nature of the work carried on there must of necessity be more or less offensive smells emanating therefrom, but during the last few years very considerable improvements have been effected in the method of carrying on the work by improved appliances, cremation of fumes, &c. Much of this work is still in progress.

Smoke Nuisances.—194 observations have been taken, resulting in the abatement of 16 nuisances; there is, however, still room for considerable improvement. If manufacturers would only realise their financial loss by the emission of black smoke from their chimneys they would very soon take steps to stop it, but I am sorry to say we are frequently met with the reply "Oh, it was good enough for our fathers, and why should we alter it." I am glad to say, however, that several large merchants and manufacturers have taken effective steps to minimise the emission of black smoke from their chimneys. Bad and careless stoking is responsible for much of this smoke.

Smoke observation to be of any practical use occupies a considerable amount of time, and although there are no special smoke inspectors in this City (as there are in most large cities) whenever an improvement is effected such time is well spent.

Common Lodging Houses.

The accommodation in private Common Lodging Houses is now as follows, viz.:—

Single Men	..	1291	persons
Single Women	..	27	,,
Married Couples 27	..	54	,,
Total	..	1372	,,

There is also accommodation in the Municipal Lodging House for 120 single men, this house is, however, seldom full, although the accommodation is excellent, a roomy cubicle being allotted to each lodger, with up-to-date laundry appliances, and foot baths free, and a bath can be had for one penny. Other institutions, such as the Salvation and Church Army Shelters provide accommodation for about 250 others. The advent of the Municipal Lodging House has without a doubt been the means of considerably bettering the condition of the private lodging houses, many of which are small and very old, whilst others, although not originally constructed for the purpose afford fairly reasonable and convenient accommodation.

The Bye Laws in regard to these houses have again been so well observed and adhered to that no legal proceedings have been necessary; the contraventions of these Bye Laws have generally been of such a trivial character that a notice from your energetic inspector, Mr. Dimond, has very speedily had the desired effect.

The adoption of the Public Health Acts Amendment Act, 1907, will greatly facilitate the better regulation of these houses in the future, especially in respect to the provision of sanitary conveniences with adequate flushing appliances, the powers for which have hitherto been very vague in this City.

My thanks are again due and are hereby gratefully tendered to the Town Clerk and his assistants, and the City Engineer and his staff for much valuable advice and assistance.

I am Gentlemen,

Your obedient Servant,

JAMES W. KIRLEY,

Chief Inspector of Nuisances.

Summary of Work effected in the Health Department during Twelve Years—1896-1907.

Prepared by the Chief Inspector of Nuisances.

Table Showing the Number of Nuisances abated and other work done in each Year since 1896.

	1896	1897	1898*	1899	1900	1901	1902	1903	1904	†1905	1906	1907
Number of Nuisances abated	8800	8049	12118	11837	10920	10151	10482	10542	11007	12232	10313	1036
Polluted Wells closed	14	11	46	49	18	19	21	11	8	22	15	8
Houses supplied with Co.'s Water ...	68	76	151	150	78	83	65	47	51	91	50	44
Houses disinfected ...	1389	855	682	951	2216	2652	3130	2866	2229	1950	2070	2057
Articles of bedding, &c., disinfected or destroyed	49226	33847	25852	29965	55807	66626	68330	63919	52813	53488	51026	46137

*Enlarged City. †Enlarged City.

Summary of Nuisances Abated and Work done by, and under the Supervision of the Inspectors in the Health Department during the Year ending December 31st, 1907.

Prepared by the Chief Inspector of Nuisances.

NATURE OF WORK.	By District Inspectors.	By Inspector of Dairies, &c.	By Inspectors of Workshops &c.	By Inspectors of Slaughter Houses, &c.	By Inspector of Common Lodging Houses.	By Inspector of Bake Houses.	TOTALS.
Visits and Re-visits	32195	2379	5224	16847	317	1283	58245
Drains entirely relaid, &c.	341	11	23		1		376
Do. partially relaid	624	12	59	5	1	2	703
W.C.'s fitted with new pans, &c. ...	789	14	104	4	1	16	928
Do. cleansed and amended	216	6	138				360
Do. fitted with flushing appliances ..	238	8	117	4	4	16	387
Additional W.C. accommodation provided ... ... -	21		35			1	57
Dilapidated Houses repaired, &c. ..	376				6	27	409
Defective Roofs repaired	251	3	13				267
Sinks and Yard Gullies trapped ..	1484	22	74	10		2	1592
Yards paved by Owners	755	34	80	12			881
Cesspools abolished	22						22
Offensive Deposits removed	169	208	12	23	2	2	416
Keeping of Pigs, &c., prohibited ...	118						118
Smoke Nuisances abated	16					2	18
Offensive Trades do.	45						45
Polluted Wells closed	8						8
Company's Water provided to houses ..	44		2				46
Nuisances from overcrowding abated .	42		6				48
Dairies, &c., Cleansed and Improved ..		51					51
Workrooms and Passages, limewashed &c.			522				522
Do. better ventilation secured			116			2	118
Rooms at Tenement Houses limewashed, &c.	1275						1275
Passages and Stairs at do. do.	287						287
Slaughter Houses limewashed				418			418
Do. Paving repaired ..				7			7
Limewashing, &c., secured		376			80	214	670
Other Nuisances abated	279	21	4	10	21	5	340
Totals	**7400**	**766**	**1305**	**493**	**116**	**289**	**10369**

No. of Complaints received and attended to	1090
,, Offensive trades visited	117
,, Smoke observations taken	194
,, Times smoke test applied to drains	1675
,, Notices served informal	1450
,, ,, ,, formal	406
Half-yearly Cleansing Notices served, Common Lodging Houses	80
,, ,, ,, ,, Bakehouses	214
,, ,, ,, ,, Dairies, Cowsheds, &c. ...	235
,, ,, ,, ,, Slaughter Houses ...	210
,, ,, ,, ,, Tenement Houses ...	237
No. of Visits to houses *re* infections disease	5869
,, Houses disinfected after such disease	2057
,, Articles of Bedding, &c., removed and disinfected ...	45578
,, Do. Do. and burnt	559
Total number of Articles dealt with	46137
Weight of Meat destroyed as unfit for food	50 tons 10 cwt. 1 qr. 8 lbs.

JAMES W. KIRLEY,
Chief Inspector of Nuisances.

City of Bristol.

FACTORY AND WORKSHOP ACT, 1901.

Report of the Medical Officer of Health on the Administration of the Act in the City of Bristol during the Year 1907 (Sec. 132, F. & W. Act. 1901).

Workshops.

The Factory and Workshop Act (1891) transferred the Sanitary control of "Workshops" and "Workplaces" from the Inspector of Factories to the City Council acting as the Urban Sanitary Authority.

A special Inspector of Workshops was appointed, Workshops were at once placed on the Register and inspected, and this control has been continuously exercised since its commencement up to the present. Upon the extension of the City in 1897, a second special Inspector of Workshops was appointed. The progress of the work year by year, is shown in the following table ·—

TABLE 1. **Workshops.** CITY OF BRISTOL.

Showing particulars in regard to the Inspection of Workshops since 1891.

Year.	Population of City.	No. of Workshops on Register.	No. of Nuisances abated.	Visits & Revisits.	Particulars sent to H.M. Inspector.	Communications received from H.M. Inspector.
1892	223,592	134	215	970	—	5
1893	225,028	349	568	2377	303	15
1894	226,578	584	644	2188	128	18
1895	228,139	764	558	1978	29	32
1896	230,623	881	578	2456	10	35
1897	232,242	1042	660	2674	14	19
CITY ENLARGED.						
1898	316,900	1123	1203	4943	16	21
1899	320,911	1602	1117	4494	37	16
1900	324,973	1800	1004	4263	13	15
1901	329,086	1846	1005	4875	12	25
1902	334,632	1872	1187	5480	21	62
1903	338,895	1532	1110	5885	39	71
1904	343,204	1537	1237	5563	45	88
CITY ENLARGED.						
1905	358,515	1611	1366	4973	25	52
1906	363,223	1652	1058	5141	14	37
1907	367,979	1611	1305	5224	36	63

The details of work secured during the year 1907 are shown in the following table :—

TABLE 2. **Workshops.** CITY OF BRISTOL.

Work secured by the Special Inspectors of Workshops, etc., in the City of Bristol, during the year 1907.

Total Visits and Re-visits	5224
Total Nuisances abated	1305

PARTICULARS OF NUISANCES DEALT WITH.

DRAINAGE AND FILTH NUISANCES.	Drains entirely relaid	23
	Drains partially relaid	59
	W.C.'s fitted with new pans	104
	W.C.'s cleansed and amended ...	138
	W.C.'s fitted with flushing appliances	117
	Additional W.C. accommodation provided	35
	Sinks and Yard Gullies trapped ...	74
	Offensive Deposits removed	12
STRUCTURAL DEFECTS	Defective Roofs repaired	13
	Yards paved by Owners	80
LIMEWASHING AND CLEANSING.	Workrooms and Passages, limewashed and cleansed	522
VENTILATION AND OVERCROWDING.	Nuisances from overcrowding abated	6
	Better Ventilation secured in Workrooms	116
WATER SUPPLY.	Company's Water provided	2
	Other Nuisances	4

Home Work.

(SECS. 107 TO 115)

The following table shows particulars with regard to the lists of Outworkers received during the year 1907. The lists are kept by the Town Clerk, who forwards to the Medical Officer of Health the names and addresses of those Outworkers who reside within the District of the City of Bristol

TABLE 3. **Workshops.** CITY OF BRISTOL.

OUTWORKERS.

Showing Lists received during the year 1907.

Nature of Employment.	February Lists.		August Lists.	
	No. of Lists.	No. of Outworkers.	No. of Lists.	No. of Outworkers.
Boot and Shoe Making	12	186	24	299
Cabinet Making, etc.	1	7	1	6
Manufacture of Wearing Apparel	68	1633	87	1655
Other Trades ...	3	5	4	41
	84	1831	116	2001

Upon receipt of the lists of Outworkers the Workshop Inspectors visit the premises as far as possible in conjunction with their work under the other provisions of the Act. The number of premises visited in 1907 was 1396, and 40 sanitary defects were found to exist, which were rectified ; in no instance was any case found where wearing apparel was being made,cleaned, or repaired in a house, whilst any inmate was suffering from Scarlet

Fever or Small Pox (see Sec. 109). Nor did any case require action to be taken under Section 110, for the reason that all such conditions as are specified in Sections 109 and 110, have, since the adoption of the Notification Act in 1890, been most carefully guarded against by a complete system of administering the Notification and Public Health Acts, in which these questions have always received special attention.

Bakehouses (Secs. 97—102).

In 1883 the Sanitary control of Bakehouses, which had from 1878 until that date been under the control of H.M. Inspector of Factories, was re-transferred to the Medical Officer of Health.

Considerable improvement in these premises has been secured, but, it is a drawback that no regulations are contained in the Act with regard to construction ; so that certain underground rooms, old dilapidated premises not fit for the purpose, and similar conditions, had to be tolerated.

The systematic inspection has been continued year by year with evident improvement.

In 1904 underground bakehouses received special attention under the Factory and Workshop Act 1901 : a considerable amount of alteration was secured and duly set forth in the Annual Report for 1904.

Workshops. TABLE 4. CITY OF BRISTOL.

BAKEHOUSES.

Showing defects found and remedied in each year since bakehouse inspection was instituted.

Year.	Particulars.	Total.
1884	Total contraventions found in respect of cleansing, lime-washing, defective drains, repairs, and defective ventilation.	342
1885	Ditto	244
1886	Ditto	96
1887	Ditto	132
1888	Ditto	69
1889	Ditto	65
1890	Ditto	89
1891	Ditto	80
1892	Ditto	71
1893	Ditto	36
1894	Ditto	57
1895	Ditto	74
1896	Ditto	57
1897	CITY ENLARGED IN 1897.	140
1898	Ditto	178
1899	Ditto	168
1900	Ditto	172
1901	Ditto	151
1902	Ditto	198
1903	Ditto	192
1904	CITY ENLARGED Including special work required in underground bakehouses.	250
1905	Ditto	230
1906	Ditto	232
1907	Ditto	281

Factory and Workshop Act, 1901.

Inspection of Bakehouses for the year 1907.

REPORT OF THE INSPECTOR IN RESPECT OF WORK DONE UNDER THE PROVISIONS OF THE ABOVE ACT, WITH PARTICULARS OF THE CONDITIONS FOUND.

During the past year 349 various Bakery premises were in operation at some time, and this number was a decrease of seven as compared with 1906.

These Bakeries were inspected on 1283 occasions, and the condition in which they were found was as a whole very satisfactory; the progressive improvement noted and reported in late years has been maintained.

On 1,002 inspections the Bakeries were found in good and satisfactory condition, and on 279 they required attention in respect of various defects, chiefly of a minor degree.

The number of nuisances, dilapidations or contraventions of the Regulations amounted to 281, or 51 more than in the year previous, but of these, the cases that could be classed as serious amounted to only 16 as against 32 last year, but there was an increase of 18 cases where repair of dilapidations of roofs, floors, etc., were necessary.

In accordance with the improved sanitary conditions now required, a higher standard of cleanliness of workrooms, bakehouses, utensils and conveniences has been called for, and a more prompt compliance with the bi-annual lime-washing urged, with the consequence that in 51 cases more than last year it was necessary to call attention to these matters, which I am pleased to say were in nearly all cases remedied at once upon request.

197 verbal and 82 written requests were made, and all, with one or two exceptions (which are of a structural nature and now under consideration) have been complied with.

Improved modern sanitary conveniences were secured in 17 instances in accordance with the Local Government Board's Order.

Table of particulars is appended.

Yours obediently,
S. DIMOND,
Inspector of Bakeries.

TABLE 5.

Table of Bakehouse Inspection for the Year.

1907. With particulars of Condition. Contraventions, Action taken, and Results.

Total number of inspections and visits	...	1283
Number of Bakehouse premises found to be in good or passable order and condition	1002	
Ditto ditto not in satisfactory condition from one of the undermentioned defects	281	
	1283	

PARTICULARS OF DEFECTS AND CONTRAVENTIONS.

Total Defects.	Nature of Defects, etc., and Improvements secured.		Total Notices	Description of Notices Complied With.	
281	Contraventions of lime-washing regulations	179	279	Informal Notices given to abate nuisances, effect repairs, or comply with Regulations	197
	Ditto General cleaning	35			
	Bakehouse premises with defective drainage	2		Various Written Notices served and complied with, or under way at end of the year ...	82
	Ditto with defective floors, roofs, paving, or other dilapidations ...	27			
	Ditto with defective ventilation improv'd	2			
	Ditto Manure accumulations and other deposits	12			
	Waterclosets reconstructed and Flushed ...	16			
	Additional W.C.'s provided	1			
	Smoke Complaints	2			
	Attached dwelling-houses cleaned ...	3			
	Traps put in	2			
281		281	279		279

S. O. DIMOND, *Inspector.*

FACTORY ACT. HOME OFFICE FORM

Annual Report of the Medical Officer of Health for the year 1907, for the City of Bristol.

on the administration of the Factory and Workshop Act, 1901, in connection with

FACTORIES, WORKSHOPS, LAUNDRIES, WORKPLACES AND HOMEWORK.

1.—INSPECTION.

including Inspections made by Sanitary Inspectors or Inspectors of Nuisances.

Premises. (1)	Number of		
	Inspections (2)	Notices Written (3)	Prosecutions (4)
FACTORIES .. .. .. (Including Factory Laundries)	1050	446	None.
WORKSHOPS .. .. .. (Including Workshop Laundries)	2778		None.
WORKPLACES .. .. .. (Other than Outworkers' premises included in Part 3 of this Report)	1396		None.
TOTAL ..	5224	446	None.

2.—DEFECTS FOUND.

Particulars.	Number of Defects			Number of Prosecutions
	Found	Remedied	Referred to H.M. Inspector	
(1)	(2)	(3)	(4)	(5)
**Nuisances under the Public Health Acts :—*				
Want of cleanliness	522	522		
Want of ventilation	116	116		
Overcrowding	6	6	Re-employment of young persons 36	
Want of drainage of floors	0	0		
Other nuisances	384	384		
†Sanitary Accommodation :—				
Insufficient	35	35		
Unsuitable or defective	242	242		
Not separate for sexes	0	0		
Offences under the Factory and Workshop Act :—				
Illegal occupation of underground bakehouse (S. 101)	None	None		
Breach of special sanitary requirements for bakehouses (SS. 97 to 100)	None	None		
Other offences (Excluding offences relating to outwork which are included in Part 3 of this Report)	281	281		
Total	1586	1586	36	None

---

* Including those specified in Sections 2, 3, 7 and 8, of the Factory and Workshop Act as remediable under the Public Health Acts.

† Sec. 22 of the Pub. Health Acts, Amendment Act, 1890, is in force in the City, the Standard conforms to the Memorandum.

3.—HOME WORK.

*Nature of Work. (1)	†Lists. (2)	†Outworkers. (3)	(4)
Outworkers' Lists (S. 107) :—	Twice in the year.	Twice in the year.	
Lists received from Employers—		Contractors	Workmen
Wearing Apparel—Making, &c.	70	—	3320
Furniture and Upholstery	1	—	15
	71	None.	3335
	Once in the year.	Once in the year.	
		Contractors	Workmen
	(5)	(6)	(7)
Wearing Apparel—Making, &c.	41	None.	456
Numbers of Addresses of Outworkers received from other Councils (8)	5		
Numbers of Addresses of Outworkers forwarded to other Councils (9)	1,914		
Prosecutions—			
Failing to keep or permit inspection of lists (10)	None.		
Failing to send lists (11)	None.		
Number of Inspections of Outworkers' premises (12)	1398		
Outwork in unwholesome premises, Section 108 :—			
Instances (13)	None.		
Notices served (14)	None.		
Prosecutions (15)	None.		
Outwork in Infected Premises, Section 109, 110.			
Instances (16)	None.		
Orders made (S. 110) (17)	None.		
Prosecutions (Sections 109, 110) (18)	None.		

---

* If an occupier gives out work of more than one of the classes specified in column 1, and subdivides his list in such a way as to show the number of workers in each class of work, the list should be included among those in column 2 (or 5 as the case may be) against the principal class *only*, but the outworkers should be assigned in column 3 and 4 (or 6 and 7) into their respective classes. A footnote should be added to show that this has been done

†The figures required in columns 2, 3 and 4 are the *total* number of lists (received from employers who sent them both in February and August as required by the Act) and of the entries of names of outworkers in those lists. They will, therefore, usually be double of the number of such employers and (approximately) double of the number of individual outworkers whose names are given, since in the February and August lists of the same employer the same outworker's name will often be repeated.

4.—REGISTERED WORKSHOPS.

Workshops on the Register (s. 131) at the end of the year. (1)	Number. (2)
Important classes of workshops, such as workshop bakehouses, may be enumerated here:—	
Workshops	1767
Workshop Bakehouses	349
Total number of workshops on Register ..	2116

5.—OTHER MATTERS.

Class. (1)		Number. (2)
Matters notified to H.M. Inspectors of Factories: Failure to affix Abstract of the Factory and Workshop Act (S. 133)		36
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (S. 5)	Notified by H.M. Inspector	63
	Reports (of action taken) sent to H. M. Inspector	63
Other		None.
Underground Bakehouses (S. 101):— Certificates granted during the year ..		None.
In use at the end of the year		35

NOTE.—The Factory and Workshop Act, 1901 (S. 132), requires the Medical Officer of Health in his Annual Report to the District Council to report specifically on the administration of that Act in workshops and workplaces, and to send a copy of his Annual Report, or so much of it as deals with this subject, to the Secretary of State (Home Office). If the Annual Report is presented otherwise than in print, it is unnecessary to include in the copy sent to the Home Office the portions which do not relate to factories, workshops, laundries, workplaces or homework. The duties of Local Authorities and the Medical Officer of Health under the Act of 1901 are detailed in the Home Office Memorandum of December, 1904. A further Memorandum, on the Home Work Provisions of the Factory Act, was issued to all District Councils and Medical Officers of Health in October, 1906

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